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Memoirs and Correspondence

OF

LYON PLAYFAIR

LORD PLAYFAIR OF ST. ANDREWS, G.C.B.

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MEMOIRS AND CORRESPONDENCE

OF

LYON PLAYFAIR

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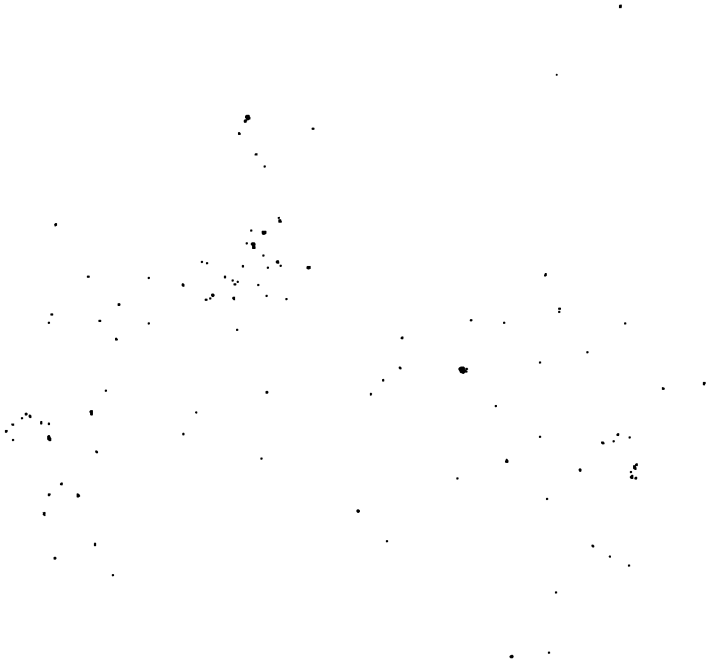

MEMOIRS AND CORRESPONDENCE

OF

LYON PLAYFAIR

FIRST LORD PLAYFAIR OF ST. ANDREWS

P.C., G.C.B., LL.D., F.R.S., &c.

BY

WEMYSS REID

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I DEDICATE THESE MEMOIRS OF HER HUSBAND'S LIFE AND WORK TO EDITH, LADY PLAYFAIR, IN GRATEFUL ACKNOWLEDGMENT OF THE ASSISTANCE SHE HAS GIVEN IN THEIR PREPARATION.

LONDON, *October*, 1899.

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MEMOIRS AND CORRESPONDENCE

OF

LYON PLAYFAIR.

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St. Andrews Seventy Years ago—Its Primacy among Scottish Seats of Learning—A Home for Retired Officers and Officials—The Record of Scotsmen in Indian Administration—Principal Playfair and His Four Sons—George Playfair, Father of Lyon—Lyon's Connection with St. Andrews—Characteristics—His Autobiography—His Life penetrated by Patriotism—A Pioneer of Sanitary and Educational Reform—As Political Economist—As Politician—As Man.

THE grey old city of St. Andrews, with the ruins of its great cathedral facing the waters of the German Ocean, its ancient university buildings and its historic golf links, has become in recent times familiar to a large proportion of the inhabitants of Great Britain. It is now a fashionable watering-place, crowded for three months every year by visitors from all parts of the country; whilst the game of golf, which has been played at St. Andrews without intermission for centuries, draws every summer to the city an increasing number of the votaries of that most healthful and enjoyable recreation. But in the days when golf was almost unknown beyond the breezy Fifeshire links, and when the railway system had not yet annihilated distances, St. Andrews was altogether different from the gay and bustling city of the end of the century. Seventy years ago it was probably the sleepiest little town in Great Britain.

In many respects it was little better than a fishing village. For a few months every year a scanty muster of red-gowned students gave passing animation to the scene; but as a rule its wide streets were silent and grass-grown, and the only sound that indicated the existence of any form of human activity was the whirr of the loom or the sharp crash of the shuttle as it caught the ear of the wayfarer when he passed the cottage of some busy weaver.

Yet even then, in its period of decay and desertion, St. Andrews had certain claims upon the respect of the outer world. Although its university had vigorous rivals at Edinburgh, Glasgow and Aberdeen, it took precedence of any of them, and as the most ancient seat of learning in North Britain, its children claimed for St. Andrews the name of the Scots Oxford. It was not its academic fame, however, which was its only title to special distinction. Living and house rent were both cheap in the old city. It was free from the more aggressive intrusions of modern trade. Its university gave the little town a microscopic social circle of cultivated people, some of whom had reputations that were national rather than local. Its keen health-giving air and its delightful golf links added to its attractiveness. In short, it combined the advantages of Oxford and Leamington, and, as was not unnatural, it became, in consequence, a favourite place of residence for retired officers of the army and navy, and for a class not less important, retired East Indian officials. During the first half of the century, indeed, those whom the world at that time designated as "nabobs" were a common feature in the life of St. Andrews.

It has been the good fortune of the Scottish people of the cultured classes for many generations to furnish a liberal supply of recruits to these three branches of the public service, and more particularly to the last named. Students of Indian history know how the names of Scotsmen abound

in every department of the administration of India during the last hundred years. And Scotland has no reason to feel ashamed of the record which these sons of hers have left behind them. Somehow or other they seem to have possessed in a peculiar degree the qualities which are of greatest value in the man who undertakes the duties of the public service. Caution combined with enthusiasm, shrewdness of judgment allied to steadfastness of purpose, great powers of work, simplicity of life, a natural frugality, and above all an unassailable devotion and loyalty—these seem to be the qualities which may be confidently looked for in that order of Scotsmen to whom the service of our country has owed so much. Many of the men who, in the early years of the nineteenth century, settled down in the quiet streets of St. Andrews to pass their closing days on its links and in its simply furnished drawing-rooms, were men who, in distant lands, had done great deeds for Britain in days when the newspaper had not yet become the trumpeter of contemporary fame.

Among the many families in St. Andrews connected by various links with our ever-growing empire in the East, there was none better known than that of the Playfairs. The name was one that had long been familiar in the annals of the ancient city. If one does not find Playfairs taking part in those stormy scenes which once gave St. Andrews a place of importance in the political and ecclesiastical affairs of Great Britain—if no Playfair, for example, is to be found in the company of Cardinal Beaton, John Knox, Andrew Melville, or Archbishop Sharpe—the name rises into notice almost as soon as the days of storm have passed, and St. Andrews, after the long strife of contending kirks and rival dynasties, has turned itself to the occupations of peace. In 1738 a certain James Playfair was born at Bendochy, in the county of Forfar. In 1773 he married one Margaret Lyon,

a kinswoman of the family of the Earls of Strathmore; and in 1799, having won distinction as a writer of historical and geographical works, he became Principal of the United Colleges of St. Leonards and St. Salvator. The reader will learn more of Principal Playfair and of his pedigree by and by. Here it is only necessary to say that just a hundred years ago this worthy man, as Principal of the University of St. Andrews, was at the head of the society of the city, and the father of a numerous family, all of whom played a useful and honourable part in life, and one of whom became the father of the subject of this memoir. Three of Principal Playfair's four sons had careers in the public service. The eldest, George, was a surgeon in the employment of the East India Company; the second, William, and the third, Hugh, were officers in the Indian army. Only one son, the youngest, took to a commercial life, and became a merchant at Glasgow. The Playfairs consequently furnished a striking example of those Scotsmen of culture and social position who devote themselves to the public service, finding in the duties and the honours of that service a more satisfying compensation than that which attends the mere pursuit of wealth. Like all their order, they turned with instinctive affection from the distant lands in which they did their life's work to the grey old city which had been the cradle of their race. George Playfair sent his children, of whom Lyon was the second, from the dangers of childhood in India to spend their youth in St. Andrews. The other sons of the Principal themselves came back to their native place to end their days, and one of them, Sir Hugh, commonly known as "the Provost," became, about the middle of the present century, the benevolent despot and ruling power in the city.

Lyon Playfair, though born at Chunar, in the province of Bengal, passed his youth at St. Andrews. At St.

Andrews he first tasted the joys of learning, and at St. Andrews, at the close of his long and busy life, his remains were laid to rest in the burial-ground that surrounds the ruins of the old cathedral. If one desired to find a typical example of that class of Scotsmen of which I have spoken, it would not be easy to find one more striking than that afforded by Lyon Playfair. The man, the story of whose life is to be told in these pages, never rose to that dazzling eminence which justifies the world in describing a human being as supremely "great." He did not pretend to the genius which lifts a few men high above their fellows. It cannot be affirmed that he was one of the great figures of his generation. Yet his life, though it was lived without ostentation and without parade, was undoubtedly one of the fullest and most useful lives of his time. It was emphatically a life of work, and of work not for the accumulation of wealth or the achievement of fame, but for the acquiring of truth and for the service of his fellow-men. That he won what the world regards as a brilliant personal success is not to be denied. He, the son of a surgeon on the Bengal establishment, beginning life as a student of science, and compelled to look almost entirely to his own exertions for his advancement, rose to be one of the acknowledged counsellors of successive Governments upon questions that affected the most important interests of the people, one of the most influential leaders and teachers in the education of the nation, and one of the most active of those men who, "behind the scenes," exercise so great a control over public affairs. That he won for himself honours varied and distinguished need not be told. Their record will appear in due time. But his most conspicuous success was not in the winning of stars and titles, but in the actual accomplishment of work which has not only benefited his own generation, but must benefit many generations to come.

We have to tell here the story of how the young Scotch student, who had hardly emerged from his boyhood when he began to feel the passion for public service, worked in that service throughout a long and laborious life, and achieved in it triumphs that the world will not lightly forget. It is, most fortunately for his biographer, a story that is told partly in Lyon Playfair's own words. The chapters of autobiography of which this memoir will in part consist were not prepared for publication. In the first instance they were jotted down at irregular intervals for the benefit of his family. They were never revised by their writer, and as they advance they lose something of continuity. At the best, they are a plain, unvarnished record, in which many incidents of interest in the life with which they deal are either omitted altogether or passed over hurriedly. They consequently require not a few additions in order to make the narrative complete; whilst here and there the meaning of a particular passage needs elucidation. But wherever it has been possible I have left Lyon Playfair to tell the story of his life in his own way. All that I ask of the reader at the outset is to remember that this is emphatically a story not of adventure, but of work. The character of the man whose life it tells will be gathered in part from the tasks he accomplished, in part from his own letters and from the reminiscences of his friends, and in part from a knowledge of that side of the Scotch character which is specially noticeable among the men of the class to which he belonged. I have thought it right to touch upon this last subject at the outset of my task; for rightly to understand the character and the life of Lyon Playfair one must understand something of the spirit which has led so many young Scotsmen to devote themselves to the service of their country in the arts of peace with a patriotic fervour as intense as that which ever inspired one of the heroes of

arms. To Lyon Playfair the good of his country was a thing to be pursued not merely in the Senate, or on contested fields, but in the laboratory and the council room, in social intercourse, and in the humdrum round of daily life. It was a thing never to be lost sight of, no matter how incongruous with public work the scene or the circumstances might be. It was something calling not so much for isolated deeds of heroism as for a patient and unremitting care, extending even to the most trivial tasks and incidents. The reader will see how conscientiously he gave effect to this conviction as the story of his life is unfolded in these pages.

In one respect Playfair was exceptionally fortunate. That was in the period over which his life's work extended. Born when his country was slowly beginning to recover from the severe exhaustion of the Napoleonic wars, and when the extension of personal freedom and constitutional rights engaged the attention of the great majority of the population, he began his own public work after the excitement of the struggle for Parliamentary reform had died away, and at a time when questions affecting the social and economic condition of the people were coming to the front. He may be said with accuracy to have been present at the birth of sanitary reform, not only in this country, but in modern Europe. The very first office which he held in the service of the State was in connection with that Royal Commission of Inquiry into the Health of Towns which laid the foundations of sanitary science, as we now know it, and which was the first step in the revolution that has changed the conditions of urban life throughout the civilised world. The reader will learn later on something of the conditions which prevailed in our towns before Playfair and his colleagues began their labours, and something also of the marvellous benefits which

those labours have conferred upon mankind. It was Playfair's great happiness to be enlisted in this work of sanitary reform in its very earliest stages. He threw himself into the battle against dirt and disease with as great an ardour as that which any soldier ever displayed upon the field of battle; and to the end of his days he remained what he had been in his youth, the most earnest and most energetic of sanitary reformers.

Even more fortunate was he in the fact that almost simultaneously with this new effort on behalf of the health of the people, there arose in England the great educational movement which has been one of the chief national glories of the nineteenth century. A student, with a student's devotion to science, Playfair was naturally attracted to the scientific or technical side of the educational problem, and, most fortunately for his country, he was enlisted almost at the outset in that great national undertaking out of which was destined to spring the whole system of scientific and technical instruction which, before the century reached its close, had been brought into existence. No wise man will lay much stress upon luck—the mere chances of fortune—in judging of any human life. But it is impossible to ignore the chapter of accidents, and in writing of Playfair one cannot but recognise the fortunate character of that accident which placed such a man, with his special intellectual sympathies and aptitudes, in close communication with Prince Albert at the time when that illustrious Prince was taking the first steps towards introducing an efficient system of art and science training into the country of his adoption. No better instrument could have fallen into the hands of the Prince, and no task more perfectly suited to Playfair's special sympathies and talents than that entrusted to him by his eminent patron, could possibly have been found. It was, indeed,

a rare stroke of good fortune for Playfair himself—and, as I think, for his country also—that he was thus introduced in his early youth to two such fields of labour as those connected with the health and the education of the community. When the historian comes to deal with the story of Great Britain during the latter half of the nineteenth century, he will have more to say of the great social and intellectual advancement in the condition of the people which that term has witnessed, than of the struggles of contending parties in Parliament, or even of our armies on foreign soil. In the chapter which history devotes to the social progress of our century, Playfair's name must always hold a place of honour.

He was fortunate again in beginning his public career at the moment when steam, as applied more particularly to ocean travel, was being pressed into the service of mankind. In his early youth Great Britain was indeed an island, isolated in many important respects from the rest of the world. He lived to see its insularity destroyed, and the ocean, which once separated it from the rest of the world, converted into the highway which unites it with every other portion of the globe. He lived to see the whole earth converted into one huge market and emporium, and the food supplies of the working-men of London brought to their doors from the plains of North-Western Canada, the fields of India, and the spurs of the Andes. A close student of that branch of science which deals with the economic conditions of life, Playfair was a watchful and intelligent observer of the startling developments which these conditions underwent. To the new order of things he sought to apply the old economic truths. In those truths he believed as firmly as he believed in the accuracy of the multiplication table. He was, indeed, unswerving and inflexible in his adherence to the political economy which he had

learned as a youth. As time passed, new schools arose in political economy as in other branches of intellectual study, and men who thought that even the multiplication table was open to reform, girded at the older students who, like Playfair, recognised the fact that in economics as in mathematics there are certain axioms which cannot be called in question. It was Playfair's good fortune to be able to draw the true economic lessons from the new conditions of human life with which, in the process of the suns, he was brought in contact. Few men of our time have done more than he did to show the bearing of new industrial facts and of fresh scientific discoveries upon the old laws of supply and demand, the old axioms upon the observance of which depends the wealth of nations and the prosperity of communities.

But while he was thus devoting his best energies throughout a prolonged life to the service of his fellow-men in fields which lay apart from the contentions of political parties, he was not without his record in purely political affairs. The story of his career in the House of Commons will be duly set forth in these pages. He was always more of a philosopher among politicians than of a politician among philosophers. Yet he achieved one or two rare successes even as a politician, and to him must ever be ascribed the honour of having been one of the two or three men who, at a moment when the two branches of our English race seemed to be drifting towards an inevitable and ruinous collision, were able to intervene in the cause of peace, and to avert a disaster that would have wrecked the cause of human liberty.

It is possible that the reader who intends to follow the story of Playfair's life would wish to form a mental picture of the man himself before he sets out on his task. Lyon Playfair was notable in any company, in part because of his rather diminutive stature, and in part by reason of his fine head, the massive moulding of which formed a sure

index to his intellectual powers. Slightly below the common height, he was notwithstanding a man who never gave even to the casual observer an impression of weakness. There was dignity as well as power in his glance; above all, there was the saving sense of humour. No one really knew or understood him, however, who had not the good fortune to meet him on some occasion when his conversational gifts were made apparent. His vast stores of knowledge of every conceivable kind, the strange experiences through which he had passed in his long career of labour, the stories, humorous and interesting, of which he was so admirable a *raconteur*, and the sympathetic temperament with which he was so lavishly endowed, all helped to enrich his conversation and to give it a character of its own that may fitly be called unique. Nobody who met him in casual society for the first time could have dreamed of the work he had done and the great things he had accomplished in his busy life. Few, possibly, would have imagined that one who bore his load of learning so lightly and easily was the master of stores of knowledge such as it is given to few amongst us to possess. But no one, even if he were but the chance acquaintance of an hour, could be brought in contact with him without feeling something of the fascination which he exercised upon all around him, in virtue of his unfailing gaiety of heart, his inexhaustible good nature, and the charm of an intellect that seemed to illuminate every topic which came within its radius. I have to tell the story of a great worker, who laboured for pure and unselfish ends; but at the outset the reader ought to realise the fact that Lyon Playfair was one of those men of exceptional personal and social gifts, before whose tact difficulties that to others would prove insurmountable seem to melt away, and whose bright spirits create around them an atmosphere of good-will and confidence which is recognised by all with whom they are destined to be brought in contact.

CHAPTER II.

AUTOBIOGRAPHY.—I. MY RELATIONS.

The Playfairs: Professor Playfair and the Commander-in-Chief: Principal Playfair: Mrs Macdonald and Her Doubts: Sir Hugh Lyon Playfair: James Playfair and His Romance: Praying for My Conversion: A "Token": The Sin of walking on Sundays: I introduce Myself to My Father: Dr Macvicar and His Definition of Water: My Brothers. Playfair's Earliest Extant Letter—Mrs Macdonald on His Disposition as a Child.

As my family and intimate friends desire that I should leave for their information some recollections of my life, I comply with their wish, so far as it can be done by one who has never kept a diary or a journal. If they are ever published my only apology is that they may form some encouragement to others who, like myself, have had in early life few friends and no influence, to believe that their future position depends upon themselves, and not upon their surroundings.

My family name in old records is often written Playfere, and doubtless originally meant playfellow, the word "fiere" being used in Burns's 'Auld Lang Syne' as "companion." In much older poems it is employed in a like way. Thus in the Scottish ballad 'The Jew's Daughter,' preserved by Bishop Percy in his 'Reliques,' the word occurs in this sense:

> "Then out and cam the Jewis dochter,
> Said, 'Will ye cum in and dine?'
> 'I winna cum in, I canna cum in
> Without my play-fieres nine.'"

Although this was doubtless the origin of the name, the first time that the name is mentioned to my knowledge

the spelling is more like the modern version. In 1290 "William Playfayre" brought letters to Edward I. from Sir John Comyn "intimating the arrival of the Maiden of Norway."[1] He seems to have been the Earl of Orkney's letter carrier, and if I am his lineal descendant it seems all right in the process of evolution that I should have become, in 1873, Postmaster-General! All through the few records that remain of my family they seem to have been eminently respectable, hard-working citizens, without ever rising to any high rank or position. The name frequently appears in civic records from the fifteenth century to the nineteenth in the list of magistrates in the Scotch burghs, or among those of Scotch ministers of a Radical turn of mind who were punished for keeping conventicles. In the genealogical 'Memoirs of the Family of Sir Walter Scott' (pp. xxix. and xxx.) "Margaret Playfair" is referred to with honour as being "remarkable for her knowledge, memory of the Scriptures, and gift of prayer." She seems to have died in Rotterdam in 1685, so perhaps she had to leave the country for her opinions, or because her husband, Mr. Halyburton, had been denounced in 1662 by the Privy Council for his Covenanting principles. However, some persons of my name have been sufficiently orthodox to hold offices in the English Universities. In 1596 Thomas Playfair was made D.D. and Margaret Professor of Divinity in Cambridge, and later he was appointed Chaplain to King James. He is celebrated by Phineas Fletcher thus :—

"Who lives by death, by death in death is lying;
But he who living dies, best lives by dying,
Who life to truth, who death to sorrow gives,
In life may die, by death more surely lives.
My soul in heaven breathes, in schools my fame,
Then on my tombe write nothing but my name."[2]

Occasionally one of my family name appears with distinction in Academic ranks, but more usually the members constituting it follow occupations requiring solid,

[1] 'Calendar of Documents relating to Scotland,' by Joseph Bain, Edin., 1884, Vol. II., p. 107.

[2] 'Athenae Cantabrigiensis,' Vol. II., p. 513.

though not brilliant, brain power. The highest example of the former is the case of Professor Playfair, the eminent mathematician, who was born in 1748, and died in 1819, author of a charming work, the 'Illustrations of the Huttonian Theory.' He was so celebrated for his clear and eloquent power of exposition that he rarely trusted himself to make a speech, lest he should injure his fame as a writer. On one occasion, however, he was forced to preside at the founding of the Royal Observatory on Calton Hill, Edinburgh, of which I also became chairman many years later.

Professor Playfair, at the dinner celebrating the laying of the foundation stone, contented himself with proposing toasts in the form of short epigrams, such as "May this Observatory be as permanent as the rock upon which it is founded and the science upon which it is based." The Commander-in-Chief for Scotland had a profound admiration for the professor, and rose to propose his health, but he could get no further than the statement, "I say, without the least fear of contradiction, that Professor Playfair is a man—I repeat that Professor Playfair is a man——" The audience, which had no doubt on the subject, began to laugh, and the irate Commander concluded by asserting, "Professor Playfair is a man to go to h—l with." The decorous company was disconcerted at this abnormal way of proposing the toast, and considerable curiosity was shown as to how the learned professor would acknowledge his health in an epigrammatic form. He was equal to the occasion, and replied, "I thank the gallant officer for his warmth, because there is only one other instance of an equal devotion to friendship, that in which Pylades offered to accompany his friend Orestes to a place which shall not a second time be mentioned in this assembly."

Although Professor Playfair belonged to a collateral branch of our family, I gladly claim the kinsmanship of its most illustrious member. He flourished in Edinburgh University when the names of Black, Leslie, and Hope drew the attention of all Europe to the

scientific discoveries of that university, of which in later years I was student, graduate, professor, and Member of Parliament for seventeen years. Professor Playfair, the mathematician, never married, though rumour says that he, as well as Leslie, was a candidate for the hand of the fascinating Mrs Apreece, who married Sir Humphry Davy. Playfair's fame lasts in America to the present day, as I once found in an amusing way. In 1877, on visiting America, I was anxious to see and hear a telephone which then excited much interest. Being on a visit to a house near West Point, on the Hudson, I found that a telephone could be seen there. It had one of its ends in the room of the Professor of Mathematics, who, I was warned, might resent a communication. However, I ventured, and explained through the telephone that I was an Englishman who had never seen the instrument. I was asked my name, to which I replied "Playfair." The answer then came, "Oh, I know all about you! I learned my first mathematics out of your 'Euclid.'" I disclaimed with modesty, by stating that that book came out in the last century. My unknown conversationalist replied, "Your voice is so squeaky, I thought you must be a hundred years old"!

From this digression—the type, I fear, of many digressions, as I write just as recollections arise in my memory—I come to my grandfather. He was for some time a minister in Newtyle, and then in Meigle; and though repeatedly urged to preside as Moderator of the General Assembly of the Church of Scotland, he persistently declined the honour. He was appointed to the office of Principal of the University of St. Andrews in 1800. The Principal was a man of much industry and of respectable talents. He produced a large work in six quarto volumes on geography. Of this he was so proud that he changed the crest of his family to a globe with the vainglorious motto, "*Non sic te vidimus olim.*" He forgot that geography was a rapidly progressive science. Before the last volume of his big work was out, the former volumes were out of date. I never met any human being who had

read the *magnum opus* of my grandfather. Besides this work, he published a 'System of Chronology' in 1784, and a 'Statistical Description of Scotland' in two volumes. He was historiographer to the Prince of Wales (the Prince Regent). As my grandfather died in the year of my birth, I did not know him. His widow was, however, a devoted grandmother to me. Her maiden name was Lyon, and she belonged to the Lyons of Glen Ogle, who form a collateral branch of the Lyons of Glamis, now possessing the title of Earl of Strathmore. This explains my Christian name.

Principal Playfair had four sons; the eldest was my father; the second, William, was a retired Colonel in the Indian service when I first knew him; the third was Hugh, a Major in the Indian Artillery, and the fourth James, a merchant in Glasgow. All of them had an influence on my life. On being sent from India, where I was born,[1] to St. Andrews as a mere infant, Colonel Playfair became the guardian of my brother and myself, and discharged his functions with much kindness and judgment. He placed us in the house of his widowed sister, Mrs Macdonald, a lady of remarkable ability. She had been a beauty in her youth, and had married a clergyman, who died soon after their marriage. Mrs Macdonald was an ardent naturalist, and, I believe, discovered and described several new species of marine animals which abound among the rocks of the sea shore at St. Andrews. No person could have discharged her duties to her two nephews more lovingly or judiciously than this accomplished aunt. She died at eighty-six years of age, when I was professor in the Edinburgh University, in 1864. I recollect a curious conversation on her deathbed which shows how much needless anxiety is produced to good Christians by the old Scotch belief in the literal interpretation of Bible stories. She expressed great anxiety lest her faith in the Bible should not be sufficient to secure her salvation. Knowing that she had been educated in a narrow Presbyterian circle, I asked whether her doubts were connected with verbal

[1] At Chunar, Bengal, May 21st, 1818.

d. May 29 1898

inspiration, or with the fundamental truths of Christianity, assuring her that I could not believe that they related to the latter, as I had never known a person of such a pious and devout Christian life. The old lady clutched the bedclothes and said with energy, "I do not believe that Balaam's ass ever spoke." Neither did I; so I thought it best to throw the disbelief into insignificance by putting to her the question: "Are you going to heaven trusting in the merits of your Redeemer, or are you going into heaven riding on Balaam's ass?" The dear old lady realised the absurdity of her fears, and spoke happily for the few remaining hours of her life.

My uncle, Sir Hugh Lyon Playfair, to whom I have alluded, retired from the Army as Major of Artillery, but though he subsequently became Colonel he was always affectionately spoken of as "the Major." He brought with him to his native city an unexhausted energy which at first was expended in odd ways. He bought a house on the site of the old college of St. Leonard. He had a large garden through which flowed a mill stream. For some years this garden was the Major's hobby. He built a tall pagoda over the stream, and used its power for moving dancing puppets and all sorts of mechanical absurdities. The wheel moved by the stream had the figure of a man attached to it, who bent laboriously as he appeared to turn the wheel. All round this extensive garden a border of wood, painted white, was placed upon supports. It contained the history of the world, from the time of Adam, our first parent, to the Reform Bill of 1832. All of this extensive history was painted upon the boards by the Major's own hands. The history of England, according to this singular record, ended at the Reform Bill in 1832, because then England, having reached the pinnacle of its greatness, began to decline, and was no longer worth the attention of the historian. No need to say that "the Major," like all my other relatives, was an ardent Tory. After a few years the surplus energy of Sir Hugh Playfair was diverted from his garden to the adornment of the city of St. Andrews. He was elected Provost of the city, and

retained this office to his death. When he undertook these civic duties the city was little better than a dirty fishing town, with a couple of streets of better houses for professors and retired Indian officers. The grand ruins of the cathedral and the ancient castle were neglected and crumbling, while even the university was in a decaying state. The broom of the civic reformer soon produced a marvellous change, though scarcely in a constitutional way. Ancient stairs which projected from the houses into the streets, so as to block the thoroughfares, were removed during the darkness of night, and the occupants had to devise new modes of entrance to their homes. The Major put a side way of good pavement all up the streets about twelve feet from the houses, the inhabitants of which soon found that they had to fill up the interval, so that St. Andrews became celebrated for its broad and luxurious side walks. The old churchyard surrounding the venerable cathedral was planted and beautified, and then the Government was obliged to maintain the ruins and prevent their further decay. New college buildings were extorted from Parliament, and the University Library was rebuilt on condition that it should be open to the public.

The "links" upon which the game of golf is played, and which now forms one of the most attractive features of the ancient city, was then being washed away by encroachments of the sea. The "Major" even fought against the sea, and, by judicious selections of places for shooting rubbish, extended the famous links, and built a club house for the players upon a spot reclaimed from the sea. He laboured in his improvements with the will and authority of an autocrat, and forced money by subscriptions with the audacity of a highwayman. Naturally, he constantly gave offence; but, as his reforms were always justified by good results, the Major's tyrannies were condoned, and the name of Sir Hugh Lyon Playfair is now cherished in his native city as its greatest benefactor. He found it a dull, sleepy, antiquated town, and he left it a bright little watering-place, with all the venerable

antiquities much better cared for than when he began his rather Philistine reign. How much of my knowledge was got from my uncle's wooden history of the world in his gardens I do not know, but he certainly inspired me with the love of work, and with a sense of the duty of working for others rather than for oneself.

My youngest uncle, James Playfair, was a Glasgow merchant of probity and philanthropy. His wife had fallen in a faint over a slow fire, which burnt out her eyes and destroyed her face, so that she always wore a mask. Her husband devoted himself to her with all the ardour and affection of a young lover. I stayed in his house for two years when I had left St. Andrew's College as a lad, for my father destined me to be a merchant, and put me into my uncle's office as a clerk. Both this attempt to make me a merchant and a subsequent one in India failed, as I felt I was wholly unsuited to succeed in a mercantile career. I certainly did not acquire much mercantile knowledge in my uncle's office, but I did learn to respect probity, and to work for subjects connected with the welfare of the people. So my uncle James probably did produce a lasting impression on my character. He was an eminently religious man of the school of arid Scotch orthodoxy, which was a repulsive rather than an attractive form to me. Accordingly, I was treated as one of the unconverted, and prayers for my conversion were sometimes offered. A good man, Mr Kettle, used to come and offer up hugely long prayers in the evening, during the course of which I generally slept. But on one occasion the fervour of his prayer awoke me, and I found him wrestling with God for my conversion. My uncle apologised afterwards, and said he did not approve of my being denounced as a sinner in my own presence, but he hoped that the seed sown might fall upon fertile ground. I am afraid the ground was rather stony, though I agreed "to go to the tables"; or, in other words, to take the Communion. Accordingly I was examined by an Elder, who gave me a leaden "token" to present at the table. This awful "token" frightened me out of my wits, and

impressed me with the fact that I was a sinner indeed, and unworthy of mercy. Somehow or other I lost it before the time came for using it. This admission by "token" acts as a repulsion instead of attraction to religion, and I hope it has disappeared from Scotch services. But I am not sure of it, from the following anecdote. When my youngest child was a baby, during my stay in Edinburgh as professor, she had a shrewd Scotch nurse who desired to take the Communion. She applied to her Elder, who asked how often she attended church services. The answer did not satisfy him, although she pleaded that she could not leave the baby, and so the "token" of admission was refused. She urged that she lived with a worthy master, Professor Playfair, who had ordered all his grates from the Elder's shop at her recommendation. This altered the religious aspect of the case entirely, and, turning to the deacon, he said, "Give her a token. She is an eminently respectable woman!"

In St. Andrews, as children, we were encouraged to walk in the beautiful links or by the sea-shore every Sunday; but when I studied in Glasgow as a youth, I still remember with remorse being caught in the deadly sin of taking a walk on the park or "green" on a Sunday afternoon, and being considered as an irreclaimable sinner afterwards. But in spite of all this strait-laced orthodoxy I loved my Uncle James and his suffering wife, who were daily examples of practical Christianity.

I have not yet spoken of my father, for until I was grown up and resident in Manchester I scarcely knew him, as he resided in India, and only once came home on a year's visit to my mother, while I was a child at school. He was in the Medical Service of the East India Company, and rose to the highest position, that of Member of the Medical Board in Calcutta. He was chief physician to the invading army of Afghanistan, but being attacked with ophthalmia, fortunately retired before the destruction of that army. My recollections of my father are therefore few. He was full of kindness and consideration in his

correspondence, encouraging my scientific studies, and supplying me freely with money to prosecute them. My mother was devoted to him, and constantly talked of his kindness of heart and of his ability. He introduced into medicine some native Indian remedies, especially *Mudar*, which I believe still holds its position in the Indian Pharmacopœia. My first real acquaintance with my father was when he retired from the service in 1842. He returned from India in a sailing vessel, accompanied by my mother, and I joined them at Southampton. At that time my mother had been in India for many years, and my recollection of her features was faint. I took a boat to go out to the ship which had been signalled, but as it was in motion when I reached it a rope was thrown out from the stern, and my boat followed the ship. At the stern window a sweet motherly-looking lady was writing, and I fancied that she might be my mother, but I was afraid to ask her. When I got on board I asked a stout elderly gentleman if he could point out to me Dr Playfair. He replied that that was his name, and I then introduced myself as his son Lyon. The old gentleman was completely overcome, and taking my hand, led me down to the cabin, where I found that the lady whom I had admired from the boat was in fact my mother.

Next morning my father and I went to London, leaving my mother to wait for the luggage. At the station I learned how long my father had been absent from England, and how many changes had occurred in his absence. The railway was to him a singular novelty. As the locomotive went puffing backwards and forwards on the line to get into position, he suggested that we should engage it and go up to London, just as we should now hail a hansom cab. He was full of delight and astonishment at everything he saw. Soon after his arrival I took him to the annual meeting of the Royal Agricultural Society at Derby. I had been elected an honorary member of that Society, and had to acknowledge the honour in a speech at the great dinner in the pavilion. My father was not on the platform, and did not know my position in the society, so

he was amazed and delighted to see his son rise among the magnates who had to respond to a toast. After the dinner I was to meet him at a certain door, but failed to do so. In going to my hotel I had to pass some caravan-shows, and on the platform of one of these I observed my father paying for all the boys and girls who desired to see the show! He had passed in about fifty or sixty when I arrived and disturbed his generosity. In fact my father had all the simplicity and kindness of Colonel Newcome in Thackeray's novel, and I never think of him without this connection in my mind. Already his constitution was broken up by his long tropical residence, and very soon our short acquaintance was but a memory, as he died in 1846. Now that intercommunication between India and the United Kingdom is so easy, families are not so separated as they were in the past. There used to be frequent instances, as in my case, where a father did not see his son after infancy until he was settled in life.

My mother[1] had much more direct influence on my life than my father. Her abilities were of a high order, and she had cultivated them by extensive reading. She was a favourite among the professors of the university at St. Andrews, who frequently passed the evening at her house. Among the most constant visitors was the Rev. Dr Macvicar, not a professor, but a temporary lecturer at the university. He had singular originality, a boldness of thought regarding the atomic constitution of matter, and shared in the belief in the complex molecular structure which now began to prevail. Dr Macvicar gave popular lectures on science, the first which I had heard. But he was singularly unsuited for this work. I recollect copying his description of water, and being much puzzled by it. "Water," said the philosopher, "is composed of two abysmal elements, possibly of only one in fundamental differentiation of molecular construction. It is a fluid of exquisite limpidity capable of solidification on one side and gasification on the other. In the solid state it belongs to the hexagonal system, and is a double six-sided pyramid

[1] Janet, daughter of John Ross, Esq., of Edinburgh.

with one axis of double refraction. Solid, liquid, gaseous, it is a type of matter." I was profoundly impressed with the description, and used to repeat it till in the course of time I began to understand it. From Dr Macvicar were received our earliest ideas of science, for he taught us the use of the microscope, and showed us how to open our eyes to surrounding objects. To my mother and her surroundings I owe all my early knowledge, precious little of which I derived from the grammar or classical school to which I was sent at a later period.

My elder brother, George, was about two years older than myself, but he was the protector and guide of my boyhood. He had the same exquisitely simple and affectionate character as my father, and I do not recollect that we had a single difference or quarrel in boyhood or manhood. He became a medical man, acting as surgeon in the Chinese War on board the *Phlegethon*. He then received an appointment in the Medical Service of the East India Company, and ultimately became President of the Medical School at Agra. He was loved in every station to which he went, and died in London in 1881, after retiring from the Service. My second brother, Lambert, now Colonel Sir Lambert Playfair, K.C.M.G.,[1] has seen very varied service. The gallant Outram was much attached to him, and also Sir Bartle Frere. Though in the Indian Army, his services have been chiefly diplomatic. He was for a long time Assistant, and then Acting, Governor at Aden, Political Resident at Zanzibar, and is now Consul-General of Algiers and Tunis.

My third brother, William, is now an eminent physician in London, and is well known by the originality and success of his practice. My fourth brother, Octavius, was for a short time in the Royal Engineers, but, on his marriage, emigrated to Buenos Ayres, where he soon died. I had three sisters and one adopted sister, who added to the happiness of our home life. That was of a simple character, but impressed upon all of us our future habits and tastes. Our social gatherings on Sunday evenings,

[1] Sir Lambert Playfair died at St. Andrews in February, 1899.

at a banquet of Spartan simplicity, are among the most delightful recollections of my life. Those days are long past, and since then I have dined and supped with monarchs and royal princes, but the pleasure and gratification of these entertainments has never equalled the Sunday suppers of my childhood. The good mother died in 1862, when I was a professor in the University of Edinburgh, and her sons and daughters placed a memorial window in the old College Church of St. Andrews, with the inscription, "Her children rise up and call her blessed."

The St. Andrews of to-day is still a simple city, but it is unlike that of my boyish days. Then it had not been shaken up and swept by the reforming broom of "the Major." I remember the Sedan chairs which used to be brought inside the house to carry my mother and sisters to evening parties. If the nights were fine, either a servant or one of the children would accompany them with a lantern. Society has not increased in pleasure by the greater demands made for its enjoyment.

So far as can now be ascertained, it was in 1820 that young Lyon Playfair and his elder brother George left India for St. Andrews, in order to remain under the care of their aunt, Mrs Macdonald. Six years later Mrs Playfair, whose family was now more numerous, parted from her husband in Bengal, and brought her younger children to Scotland, where, as will be seen in the next chapter, she remained with them for several years, watching over their health and education. In their tenderest childhood, however, both Lyon and his brother George were left to the exclusive charge of Mrs Macdonald. The earliest letter of Lyon Playfair which is now extant, and probably the first he ever wrote, was the following, addressed to his father in 1824, at a time when the writer was six years old. As the production of a child of that age, it is not unworthy of notice.

(*Dictated.*)

MY DEAR PAPA,—I hope our sisters are well. When will our sisters come home? We have sticks, and guns, and pencils, and mells [golf sticks]. Cousin Jessie is away at six o'clock to-day, home to Glamis. I can sing Johnny Cope. Are our sisters to bring our swords and guns, or is Papa? When will you send an answer to this letter? I am second Dux in my class. I am reading in the Collection, and it is about Cæsar—Cæsar is a Man. Our Market day is on first Thursday, and I am going to buy a penknife, and I will send something to Papa. I will give you a guess. "As I went o'er St. Andrews Brig, I met wi' George Buchanan, I took off his head and drank his blood, and left his body stan'ing." Here's another guess: "Anne Queen Shevy built a ship, an' on the deck her daughter sate, an' for her name I'm not to blame, for three times have I told you." Guess the name. I have a great heap more guesses. I'll tell you two more. "I went between two woods, and came back between two waters," "As I came o'er London Bridge, London Bridge broke, and a' the Men of London could not mend it." That guess is Ice. I will tell you no other names of the guesses. All the school was calling me Merryman, and George too, because I once got my highland stockings on, and because I had a tartan dress, tippet and sleeves and a white tippet below, and they called me Lassie and a Merryman, my dress is tartan trowsers. Tom Burns who lives in Argyle, he went to the Merryman, and there was two sticks as long as ten feet high, as long as Chunar house from the floor to the roof. The Merryman had a kind of Tambourine and he jump'd thro' it, and when he jump'd thro' it, a great heap of fire came out of it, and nobody could touch the place, it was so hot like fire. He did the same thing twice and a new thing. Tom Burns is a great big boy, and he is reading Robinson Crusoe with George. He comes at seven o'clock every night, and he is getting finely on with us. We were twice playing at his house at Argyle, and he made a ball with leather and a

ball of black worsted. May be I'm going to see the fool to-night, and he jump'd upon his horse and put his knees on the horse, and put his arms like bucksoo, and he said, "I preach, I pray the auld Manny Grey, he got cauld porridge in a cauld day." Our uncle has got a bairn, and I think it is to be christened William. I have seen the bairn, and it is like me. Maggy has a fine picture about the battle in London, and I saw it. How are you? I send a kiss to our sisters and Mamma and you. The cat has got two kittens. All our cousins are quite well, but the little baby is not quite well. When is your Market?

For LYON PLAYFAIR.

April 20th.

Mrs Macdonald accompanied this effusion with the following letter to her sister-in-law, Mrs Playfair :—

You will see by the above that Lyon is in spirits. He reads pretty well now, and likes the school as much as at first. As no children can be perfect, I would require to give you the shade with the sunshine of their characters, if I could do so in a way to make you know them thoroughly. As to temper, an instance may suffice. Lately Lyon came to me and said there was something to say, but he would not say it, as I would be angry; but as he would not say it, I had better go up to Charlotte, and she would tell me. I went up, and George was crying and sulky because Charlotte had made him sit down to his lesson after his trifling away half of the hour which Tom Burns gives him. . . . To-day, when we were at our usual morning chapter, Lyon and I waited for some time for George, who ran off in the middle of his reading. When he came back I found he had found a hoop on his way, and got so engrossed with it that he forgot we were waiting. On such occasions Lyon is too ready with his admonitions, yet so correct in his opinions that we cannot always advise him rather to help George out of a scrape than tell upon him.

April 25th.—George was trying to make prose out of his

psalms, and I have written down as he gave me his ideas. . . . So much for George. . . . Lyon is still *auld-farrant*[1] in his remarks, more correct in his conduct than George, and too apt to tell on George when he has got into a scrape. Lyon does not see a subject in reading or relating nearly so quick or accurately as George, but come to action and George is behind Lyon. I would say, were I a phrenologist, that Lyon must have the bumps of veneration and observation, and George the bump of clear understanding (were there such a one).

Lyon has been Dux for ten days both in reading and spelling, and he is in great fear lest he is trapped down, and says his lesson over and over to anyone who will hear him. The more I examine my two charges the more I observe the moral principles deep in Lyon's mind and carried constantly into action, and that it is mere theory, in comparison, with George. Yet do I hope he will not grow up worse than the general run of correct people. I wish their heads examined, and shall send you the result when I can meet with a good phrenologist.

[1] Old-fashioned.

CHAPTER III.

AUTOBIOGRAPHY CONTINUED.—II. MY EDUCATION.

1825 to 1838.

My Governesses: At School: Holidays at Glamis Castle: Entering St. Andrews University: Beginning a Business Career: Discomfiting Nocturnal Marauders: Studying Medicine: Friendship with Andrew Ramsay, the Geologist: A Chance Meeting with Sir Charles Lyell: Studying Chemistry: Friendship with David Livingstone: James Young, Founder of the Paraffin Oil Industry: Study at Edinburgh University: A Voyage to India: In a Calcutta Office: Home again: Studying under Liebig at Giessen: "Doctor of Philosophy": Appointed Chemical Manager of Print Works: Punctuality Handsomely rewarded: Among the Philosophers of Berlin. Correspondence with Liebig—Chemists and Chemistry.

WHEN my mother returned from India to superintend the education of her family, an old-fashioned governess was employed. Miss Douglas was a curious old-world specimen of a Scotch governess, and always wore a sort of high crown of brown silk worked into castellated peaks. This crown seemed never to be renewed in the years which she remained in our family. She had a singular method of teaching, but not a bad one. Every word had to be spelt according to the number of syllables by touching one finger for each syllable; while the one upon which the accent lay had to be repeated twice and touched twice, the whole word with the accent being given at the end. I have never seen since then this system, but I owe to it my distinct enunciation, which has served me so much in my public speaking. Unfortunately, however, Miss Douglas had a strong Scotch pronunciation, and her accents were not unfrequently

placed on the wrong syllable. Thus she would pronounce lunatic as lunātic, and manure as mānŭre, so that what we gained in one way we lost in another. And, to this day, I find that I sometimes astonish my audiences by a distinctly false quantity. But I retain a warm sense of gratitude to my first governess for her thorough teaching. Miss Douglas was succeeded in our family by a handsome young Scotch lady, who afterwards went to India when my mother returned with some of my sisters. She married a colonel in the Indian service, and was massacred in the Mutiny at Cawnpore. She continued her journal every half-hour on that fatal day, the last entry being, "The steps of the mutineers are on the stairs. Good-bye, my dear children." This precious journal was concealed by a native servant, and forwarded to her children in England.

At six years of age I went to the parish school. At that time every class of society used to attend the parish school, and the effect of this admixture of classes was excellent. Often in after life, when I visited St. Andrews, a working man would stop me in the street to shake hands and congratulate me on my public position, claiming as his right to do so that he had been at school with me. No more hearty congratulations or more acceptable have I ever received in my public career. Our schoolmaster was Mr Crichton, an admirable teacher. He afterwards became a Scotch minister, for it was true then that every teacher in a school had his eyes fixed upon the steeple of the church. The education in his school was broad and thorough, and I attribute much of my future success to it. I was a diligent scholar, and was only once punished, by being locked up alone in the schoolroom between the meetings. This is a bad sort of punishment for boys. My fault was making an unsuccessful experiment. Mr Crichton was particularly anxious that there should be no blots in our writing-books. A boy assured me that the scraped bone of the cuttle-fish would remove blots, and I applied it freely to a fresh wet blot, with the result that I spread it nearly over the whole page.

Unfortunately, I was taken away too soon from this excellent school, and put into the old grammar school of the city. Other men have told me that they obtained advantage from their education in that school, but I cannot recollect a single gain that I made in my many years' attendance at it. I know that I lost much of my former knowledge, and that my Latin when I entered the University was of the most miserable description. We had a great show day every year, and a month of our time was wasted in preparation for that day. Each boy was drilled in one single sentence, and the professors and examiners were duly impressed with our familiarity with it. On one of these days the second boy in our class took a panic, and the whole school was startled by hearing that David had become truant, and could not be found. His absence deranged the whole of the sentences, so the boys were sent to scour the town and bring in David before the professorial examiners arrived. We were unsuccessful in finding him, and our masters were in despair. I was third in the class, and from the continued drilling knew David's sentences as well as my own, so I volunteered to do both, and received the gratitude and future kindness of my teacher.

Latin, in its most unattractive form, was the only subject taught in this school. I certainly did not distinguish myself as a scholar. But I presume that I must have been popular, for there was a peculiar ceremony once a year, at which the scholars, with the approbation of the masters, elected a "king" of the school. The king, when elected, was crowned with an iron crown decorated with ribbons supplied by the family of the boy. He was then carried on the shoulders of the elder boys, accompanied by the whole school, in a procession through the city. Most of the houses had their doors opened as the procession passed, and gifts of gingerbread and raisins were received as a tribute by the king, who distributed them among his subjects. I was elected king of the school for three successive years. The last year of my reign was the final one of this curious

custom, and the iron crown remained for a long time in the attic of our home.

My holidays while at school were passed with my grand uncle, the Rev. Dr Lyon, in his manse at the gate of the ancient Castle of Glamis, where Macbeth murdered King Duncan. The old manse is a comfortable minister's house, surrounded by a garden containing one of the oldest of Scotch monuments. The church itself was close to it, in a primitive churchyard without beauty, and then kept in a careless way. At that time the fine old castle was not inhabited by Lord Strathmore. The whole estate was under the management of trustees, of whom my uncle was one, and so the castle and grounds were open to me without risk of being considered an intruder. I naturally busied myself with trying to discover the famous secret chamber, and the awful mystery connected with it. I drew my own conclusions, which were probably as erroneous as those which have been made by others in regard to this mystery. Although my uncle had the same name as the Earls of Strathmore, he belonged to the Glen Ogle Lyons, a collateral branch of the family. At that time the two branches had become close in the line of descent, though now they are again widely divergent.

The park round Glamis Castle is extensive, and has a small stream running through woods. A deep pool, in a sequestered spot, was my favourite haunt, at which I spent many hours of meditation, for I had no playfellows at the old manse. I believe that this lonely pool, surrounded by trees, taught me to feel that happiness depends upon oneself as much as upon one's surroundings. The family of my uncle consisted of his wife and two daughters. The old minister himself was simple and worthy. Daily I would drive out with the grey-haired old man, in a gig drawn by a horse which could not go beyond five miles an hour, but was believed by the owner to be one of the best and fastest horses in the kingdom. The good old man went at the same relative pace in his parochial duties. The minister's wife, my dear old aunt, lavished upon me the love of a mother to a child. Two charming young

ladies, my cousins, made my stay at the manse as agreeable as possible, and I returned with gladness at each vacation. They are all dead long since, but my memories of their love and kindness live fresh within me.

For nearly sixty years I never saw Glamis again. Last year (1885) we were staying in its neighbourhood at Kinnordy with Mr and Mrs Lyell.[1] My wife and I desired to see Glamis, and Lady Strathmore asked us to visit the scenes of my boyhood. It was all wonderfully changed and beautified, but it was the old Glamis still. We went to the top of the castle, and I explained to my wife all the points of interest connected with my life as a boy at this place. Lady Strathmore was full of sympathy with my memories, and insisted on being my guide to see the manse, which I found very little changed, my reflecting haunt by the old pool, and the other objects which I remembered so well. She even showed me *a* secret chamber, though not *the* secret chamber which has defied so many keen inquirers. It was delightful to me to see the castle again inhabited by an Earl of Strathmore, who has restored it so as to make it worthy of its great history. In the old hall of the castle we witnessed an operetta written by a son, and acted by the sons and daughters, of our hosts, and most admirably it was performed.

At fourteen years of age I was enrolled as a "Bejant," or first year's student in the University, and had to pay my tax of several pounds of raisins to a senior boy in recognition of my inferiority. My three professors were Professor Gillespie for Latin, Professor Alexander for Greek, and Professor Duncan for mathematics. All were excellent teachers and did their best for me, but I was miserably prepared for a university course. Of Greek I scarcely knew the alphabet, though I had acquired it by myself without a pronunciation of the letters. I remember, the professor, to test my knowledge of Greek, asked me before all the class what "basileus" meant, and I answered that I had not yet reached the verbs. However, I worked

[1] Now Sir Leonard and Lady Lyell.

hard, and made as much progress as I could under the circumstances of absolute ignorance in Greek and mathematics, and very imperfect preliminary education in Latin. The Professor of Latin encouraged boys, in their long six months' holidays, to read certain classical authors, and "profess" them for examination before him. I was so elated by my progress that in the second year I "professed" all Horace, and several books of Livy. I expect my "professions" were as unsubstantial as those made by most persons of their own attainments, for the certificate given by the professor stated that I "had been diligent in the recess, and had made extensive professions," without a word of compliment as to the result. In Greek my professor thought that I made good progress, but I never learnt sufficient to make Greek authors a pleasure to me in their own language. I had not yet found the kind of knowledge for which I was best suited. Mathematics pleased me much, and I soon got beyond the slow pace of my class by private study. Professor Duncan knew his subject thoroughly, but he had not the faculty of explaining difficulties, and his class was called "the slough of despond." Although I was not entered in the class of Chemistry and Natural Philosophy, I delighted, when I could do so with decency, to steal in with the other students and listen to the lectures. I did fairly well in the class of logic, but much regret that I did not attend Moral Philosophy, which was then taught by the great divine, Dr Chalmers. My elder brother, George, and I were beginning to find out for ourselves the studies best fitted for us. We were occupied one afternoon in the kitchen, when my mother, displeased at our remaining so long with the servants, came downstairs, and was appeased by the cook telling her "that Master George was boiling a sparrow to make a skeleton, and Master Lyon was trying to get sugar out of beetroot." George was laying the basis for becoming, as he did, President of a Medical College, and I, for my future career as Professor of Chemistry.

Our dear family home was now broken up, as my mother had to take her daughters to India to rejoin my father.

My brother George went to Edinburgh to enter on the study of medicine, and I was sent to my Uncle James in Glasgow to be made a merchant. My uncle had only one clerk in addition to myself, as his business was in Canada, and there was little work in the Glasgow office. He frequently went to Canada, and the office was left in our charge, with not half an hour's work in the day to perform. My fellow clerk, Ramsay, was the brother of Sir Andrew Ramsay, the distinguished geologist. In our abundant leisure we amused ourselves by inventing instruments by which we could compete with each other in telling the true time by the shadows of the lamp-posts in the streets. This idleness disgusted me with mercantile life, which I thought was of the same character everywhere. I passed, however, a happy time with my aunt (whose disfigurement I have already mentioned) in her villa and surrounding grounds at Woodside on the Kelvin, then wholly outside Glasgow. It is now covered with terraces and crescents. At that time it was quite remote from houses and very lonely.

I recollect on one occasion that my inventiveness was of service. My aunt had a beautiful nursemaid. We received an anonymous letter stating that the maid was really the wife of a neighbouring collier, and that next night the collier would attack the house and take her away by force. My uncle was then in Canada, and I was the only apology for a man in the house. I took the letter to the police, who laughed at it as a hoax, and would give no assistance. From the terror of the maid I felt it was no hoax, and prepared myself for an attack. I dressed up the figure of a man and put him close to an upper window, with a gun resting on the shutters opposite, and a candle burning so as to show him obscurely, yet to the best advantage. At one the next morning I saw by the moonlight four or five men crossing the lawn. They came to the door and rang the bell violently. I opened it "on the chain," and asked what they intended to do. The professed husband said he wanted his wife, and would have her. I acknowledged his right to his wife if he could establish his claim, but that

must be done in a court of law, as she denied being married. I told him that the police knew of this intended visit, and were probably watching the place, and then said we had a watchman in the house. They went back, examined my stuffed figure in the dim light, with his gun ready for action, and disappeared as quickly as they came. I had won a bloodless victory!

On my uncle's return he was much pleased with my defence of his mansion, and agreed that my terms of engagement as a clerk should be cancelled, and that I should enter upon a course of study for medicine. I went to board at the house of Mrs Ramsay, a widow, the mother of my fellow clerk. She received about half a dozen students as boarders, and was an admirable woman in every respect. Her husband had been a chemical manufacturer, and I believe was the first person to manufacture bichromate of potash; but his commercial success was not equal to his scientific aptitude. The inheritance of the latter passed to his children and grandchildren, one of whom is professor of chemistry in University College. His son, Andrew Ramsay, was one of the greatest friends of my youth, and ultimately became Sir Andrew Ramsay, the head of the Geological Survey. No one could have had a better friend, and we used to spend our vacation in the island of Arran, which is admirably fitted for geological study.

In one of my annual trips to Arran, in 1836, I carried with me the first prize of the chemistry class. The book was a handsomely bound copy of Lyell's 'Geology,' which I read on my way down the Clyde. A charming lady sat next me in the steamer. We entered into conversation, and she asked me the name of the book which interested me so much. I explained to her that Lyell, the author of the book, had established geology on a new basis, for he ascribed to natural and continuous causes the formation of rocks, which formerly were supposed to be produced by cataclysms and special deluges. The lady seemed to be amused, and said that she was glad Lyell had such an enthusiastic admirer, because she was his wife, and that

gentleman on the other side of the boat was Lyell himself. My hero-worship had its reward, for she beckoned to the great geologist and introduced me to him. When we remained at Arran, Lyell used to go into the interior; while I, knowing more about conchology than geology, assisted Mrs Lyell in getting shells on the seashore. This was the basis of a friendship which lasted till the death of Sir Charles and Lady Lyell. Last year (1885) I asked the sisters of the latter to look at their correspondence for 1836, and they found a letter from Lady Lyell telling them that she had the good fortune to sit next an enthusiastic Glasgow student in the steamboat, who pointed out to her various objects of interest.

I return from my digression to the beginning of my medical studies in 1835. As chemistry was my favourite study, I determined to enter the Andersonian College rather than the Glasgow University. It is true that the Professor of Chemistry at the latter was the famous Dr Thomson, whose 'System of Chemistry' was long the text-book of the science. The Andersonian College had a younger man, Professor Graham, one of the most original investigators of his time. His researches on 'Water of Crystallisation,' the diffusion of gases, and the 'Modifications of Phosphoric Acid,' were deemed to be classical examples of investigation. Accordingly, I enrolled myself as a student at his lectures and in his laboratory.

There were two other youths there at that time, whose friendship I then made, and retained till their death. One afterwards was widely known as Livingstone, the great African traveller. Livingstone was five or six years older than myself. He was then too poor to attend the laboratory as a regular student, but he did enter Graham's class of lectures, and also that of Dr Buchanan, another medical professor. At both these classes I naturally cultivated the friendship of this earnest student. In after years, when the name of Livingstone became a household word, it never occurred to me that he might be the shy lad whom I knew in 1836. When the well-known traveller, with the gold band round his hat, visited me in

1857, it seemed natural that he should do so, because he had occasionally written me letters on subjects of scientific interest during his absence; but he had now to explain that he was identical with my fellow-student in Glasgow. After that we saw a good deal of each other, and it was easy to see in the man the natural development of the simple, earnest, and energetic youth of early years. When his wife returned to Scotland, early in 1859, she came direct, and without notice, to my house in Edinburgh. There happened to be a large dinner party when Mrs Livingstone, whom I had never seen, was ushered into the dining-room in, naturally, a travel-stained dress. The announcement of her name assured her the warmest reception from everyone. Mrs Livingstone was most anxious to join her children that night, but did not know their address, although she thought they lived in one of the longest streets of the city. I immediately got two or three porters to divide the street between them, and call at every house. In time we discovered the address of the lady to whom the children had come on a visit, and the anxious mother was able to join them. I am afraid Mrs Livingstone found the situation more strained than we did, though it was somewhat difficult to reconcile the duties to dinner guests with those due to the wife of my friend. But people who knew the wonderful resources of Mrs Livingstone, and her admirable character, will not be surprised that she was the most calm and collected of the large party among whom she suddenly appeared.

Another fellow-student was James Young, the founder of the paraffin and paraffin oil industry. Young was a carpenter by trade, and, like Watt, was employed to repair some of the instruments in the laboratory, and ultimately was engaged as an assistant. He was a raw youth when I first knew him, but he made a large fortune, and was a most intelligent companion. He always ascribed his success in the world to a suggestion which I made to him in 1847 that he might manufacture useful oils from a natural spring of petroleum which was found in one of the coal mines belonging to my future brother-in-law, James Oakes, of

Riddings in Derbyshire. This oil, when cold, deposited shining crystals which I recognised to be the paraffin of Reichenbach. I suggested that it might be made into candles, and with much difficulty he got enough to make two candles, which I exhibited in a lecture at the Royal Institution, placing them lighted on each side of my desk. Young kept the remains of these original candles as a memorial of the origin of one of the largest of the chemical industries of modern times. Young made a large fortune by the manufacture of artificial petroleum and its products. When he died he made me one of the executors of his extensive estates. The manufacture was new in the form in which it was introduced, though natural petroleum has been used certainly since the time of Cyrus. I believe that it was known in ancient Biblical history, where it is described as "the salt of the earth." When such salt loses its savour "it is only fit to be trodden under the foot" of man, because on losing its volatile essence it becomes asphalte, which was used for pavements both in Nineveh and Babylon. Occasionally it is spoken of as "thick water," as in the remarkable chapter in Maccabees, ii. 1, where it is described as being used in burnt offerings: "And Neemias called this thing Naphthar, which is as much as to say a cleansing."

Livingstone, Young, and I were Graham's favourite pupils. Graham, our teacher, was a profound philosopher and original discoverer. He was a singularly plain man, though his expression was full of intelligence. As a professor, he was unable to keep discipline among his students, and his expository powers were not of a high order. To earnest students his lectures were full of matter, but to the ordinary attendants at his class they were obscure.

After spending two years at several medical classes, though chiefly with Graham, the latter was called to University College, London. The chief attraction of Glasgow for me was thus gone, and I went to complete my studies in the University of Edinburgh. My anatomy and surgery had been neglected by too exclusive attention to chemistry.

I at once made friends with students, my seniors in study, who adopted me into their set on account of my scientific tastes. Among these were two who honoured me by their friendship till their death. The first was the great anatomist Goodsir, afterwards Professor of Anatomy in the University. He was a perfect type of a student and an ardent lover of science. The second was a man who exercised extreme powers of fascination over everyone with whom he came in contact, Edward Forbes, afterwards the Professor of Natural History in Edinburgh. He lived in lodgings at the top of a house, and the sloping roof was covered with molluscs and star-fish drying in the sun. Many happy hours were spent with him in watching his labours. Forbes was an artist, a poet, and a philosopher. He was a tall man with a bright, intelligent face, and was a leader among the students both in work and fun. He founded an order of brotherhood, to which access was difficult. It had a badge of red silk ribbon with three letters worked into it—"M. E. O."—the initials of the Greek words signifying Learning, Love, and Wine. I am afraid the latter was represented in our gatherings by whisky toddy, in which however we never exceeded. George Wilson, the author of the charming book, 'The Five Gateways of Knowledge,' was one of our brotherhood, and in many respects was as charming and lovable as Forbes. I fear that I am now the only surviving brother of this order, which was the legitimate parent of the famous dining-club called "The Red Lions," which still holds high festival at the meetings of the British Association for the Advancement of Science. While Forbes lived, he and I were constant members of this club. No one was allowed to cheer at its meetings, for lions could only roar and wag their tails in approval. Forbes could not sing, but he chanted in a droll way his original songs. He generally had a new one for each meeting. In 1845 I was sent over to Ireland as a Commissioner to ascertain the extent of the famine produced by the potato disease, and Forbes gave at one of the dinners a poetical version of my report which concluded thus :—

"We state these, My Lords, as our opinions,
'Tis bad for the British Dominions;
As for the Solanum tuberosum,
It is a horrible thing for him as grows 'em."

With such companions, to whom I should add Page, a well-known geological author, my studies in medicine were very pleasant. We formed a special scientific society of our own and produced original papers, a few of which have since been published.

Among the professors at the University I became acquainted with two, Sir Robert Christison and Professor Syme, who remained my life-long friends. Unhappily, however, my medical studies had to be abandoned, because the atmosphere both of the dissecting rooms and the hospital produced on me a violent eczema, which was uncontrollable, and much to my grief my medical advisers ordered me to discontinue the study of medicine. Stranded in my profession, my father advised me to look, like the rest of my relatives, to India for a career, and this advice was backed by my physician. who thought that a long sea voyage might alter my constitution. Accordingly, in the autumn of 1837 I embarked in a sailing ship for Calcutta by the old route of the Cape of Good Hope. The voyage was pleasant, for at that time numerous young ladies went out to India to look for a career also. The captain of our ship was not only an irascible but a naturally cruel man. The crew consisted of Lascars, and once or twice a week he had these miserable wretches tied up and severely flogged. We remained for a fortnight at the Cape of Good Hope and I took the opportunity of studying the geology of the Table Mountain, of which I had already had full descriptions. My *sobriquet* on board the ship was always "the philosopher," and residents at Cape Town interested in science made my acquaintance, so, without a single introduction, I was invited out almost every night. I have never been at the Cape since then, but have always felt a warm interest in its welfare. By the time we reached Calcutta my collection of sea-birds, including an albatross, was inconveniently large. I had taken lessons in prepar-

ing skins and mounting them before leaving England. Our ship was occasionally overrun by centipedes and scorpions, especially after the anchor chains had been drawn up from below. On one occasion the surgeon came into my cabin in great agony. One of the creatures had been his bed-fellow. As the wound was in his back he could not treat it, so I became surgeon and freely lanced the wound, applying a water bandage. In about two hours complete relief was obtained. One morning, as I was putting on my shirt, I noticed a scorpion of respectable size inside the sleeve. I shook it into a bottle of alcohol and preserved it for many years afterwards.

On reaching Calcutta[1] I found that my father had arranged that I should follow a mercantile career in the house of Cantor, Low and Co., with an understanding that I should become a partner in due time. I lived with Mr Low on the opposite side of the Hooghly, rowing over every day to my palanquin which waited at the landing. Though I was treated with the utmost kindness by both partners of the firm, my duties were inexpressibly irksome to me. As junior clerk it was my duty to waste hours at the Custom House waiting for my turn to clear the imported goods. Whenever I had leisure I used to go to the College to see the Professor of Chemistry, Sir W. O'Shaughnessy. I gradually made the acquaintance of all the scientific men in Calcutta. McClellan, author of the 'Geology of Kamaon,' Prinsep, Wallich and others, were considerate to the youth whose scientific longings were greater than his mercantile aspirations. Without my knowledge several of them wrote to my father advising him to send me back to Europe to finish my chemical studies, and pledging themselves that I should find a good career in England, while my prospects as a merchant were not great. I do not know whether the position of the firm, in which I was ultimately to become a partner, was known to them, but it is fortunate that I left it, for in a year or two afterwards it failed. My father was in the

[1] This was in the year 1837, when Lyon Playfair was in his nineteenth year.

Upper Provinces, which at that time could only be reached by *dak*, *i.e.*, by palanquin carried by bearers, and as the visit to my parents would have occupied some months, my father wrote, telling me of this correspondence, and urged me to go back to London in order to join my old teacher, Graham, who was then Professor at University College. I was too glad to do so, though sorry to leave India without seeing my parents, who had always been so kind to me, and one of whom I only knew by correspondence. I need say nothing of the voyage back except that we touched at St. Helena, where the volcanic rocks interested me greatly, in addition to the associations connected with the life and death of Napoleon in that lonely island. During the voyage we signalled a ship which told us of the coronation of the Queen (1838).

Graham was delighted to receive his former pupil in his laboratory. He appointed me private assistant in his researches and declined to treat me as a pupil. James Young was still his lecture assistant, and the students were as badly kept in order as those in Glasgow. I never understood this want of discipline, for Graham's lectures were admirable, and his lecture experiments exceedingly well prepared and performed. I attended Professor Sharpey's lectures on Physiology and Dr Pereira's on Materia Medica, as I still hoped that I might take my medical degree.

Next year, 1839, Graham strongly advised me to go to Giessen, in Germany, to study under the great chemist Liebig, the founder of organic chemistry, and one of the most acute and remarkable philosophers of the age. On presenting myself to Liebig I was much struck by his handsome appearance and classically cut face. I mentioned my name, and told him that I was a pupil of Graham's, and he laughingly said, "You might have added that you are the discoverer of iodo-sulphuric acid," which I had recently described in short papers. Finding that I was not a mere tyro in chemistry he welcomed me warmly, and at once asked me to help him in some researches upon the fatty bodies. Before, however, I

entered on this inquiry, he pitted me against one of his most careful assistants to make an organic analysis of an unknown substance. Our two analyses came out identical to the first decimal place, and I became a favourite pupil. At that time Liebig had the best laboratory in Europe, and among the pupils were Ettling, Will, Varrentrapp, Knapp, Kopp and others, all of whom rose to professorial rank, and some to great distinction as discoverers. We were almost all engaged in the repetition and extension of Chevreul's discoveries on fatty bodies, a masterly research for the time at which it was made. I was fortunate in finding a new fatty acid in the butter of nutmeg, which I called "Myristic Acid," and a new crystalline substance in cloves, "Caryophylline." Liebig at this time was writing his great book on agricultural chemistry, and he invited me to translate it into English from the manuscript. I arranged with English publishers to do this for a hundred pounds, the first money which I had yet earned. My knowledge of German was not good, but I had a motive to work hard, and my translation progressed as fast as the manuscript. It was thought desirable that Liebig's agricultural views should be announced in a general way at the meeting of the British Association in Glasgow. Liebig was unable to go, and persuaded me to be his representative. Several of the young chemists, among whom were Ettling, Will and Varrentrapp, joined in the trip. When we reached Glasgow I found that I had been appointed Secretary to the Chemical Section. At this meeting I made friends with several men who afterwards exercised a considerable influence upon my life. One of these was Dr Buckland, the great geologist, and the other, Sir Henry de la Beche, the head of the Geological Survey.

My student days were soon to be over, so I returned to Giessen and took a degree as "Doctor of Philosophy." The visit to Glasgow had made me known to various chemical manufacturers, and in the spring of the following year (1841) I received an offer from Mr Thomson, of Clitheroe, to become chemical manager of his large print

works. His letter was peculiar, and made the condition that I should meet him at Spring Gardens, in London, that day week at twelve o'clock. Those were coaching days, and I went down the Rhine, when the ice was breaking up and the villages were flooded. In one of these I passed the greatest part of the night in a boat, helping the villagers to get out of their houses, and placing them on a neighbouring hill. However, I got to London in time, and reached Spring Gardens at a quarter to twelve on the day appointed; walking up and down the street till two minutes to the hour, I presented myself in the room just as the Horse Guards clock struck twelve. Mr Thomson, a gentlemanly-looking old man, sat with a watch in his hand. He said, "You are very punctual," and explained the nature of the work. He then stated that his intention had been to offer me £300 a year, rising to £400, but on account of my punctuality on the day and *hour* named, he would make his offer £400, rising to £600. This was an excellent reward for punctuality, so I accepted the terms offered, and my student days were at an end. It appears that my employer had consulted both Graham and Liebig as to how he should obtain a trained chemist, and both had recommended me.

On returning to Giessen to wind up affairs I determined to visit Berlin before going back to England. At that time, being only twenty-two years of age, I could scarcely expect to have the advantage of knowing the distinguished philosophers who then made the University of Berlin so celebrated. On arriving in Berlin, to my surprise, the professors received me as a colleague, not as a student. The results of some of my investigations made at Liebig's laboratory seemed to be well known in Berlin. Heinrich Roze, the great analyst, Mitscherlich, the discoverer of isomerism, Magnus, the eminent physicist, Dove, the meteorologist, Schonheim, the author of the great work on technical chemistry, Rammelsberg the mineralogist, all vied with each other to make my stay in Berlin agreeable. Heinrich Roze was especially hospitable, and kindly asked many of his colleagues to meet me at dinner and supper.

He was a man of sunny temperament, and had a happy home. My English notions were a little disturbed at finding that he had married his deceased wife's sister, but the happiness of his home made me a convert on this contested question, not even now settled in England. Dove, whose labours in meteorology had been so great, reminded me of my friend Edward Forbes, on account of his fun and jollity. He gave a supper in a restaurant one evening, and this was more like a "Red Lion dinner" at the British Association than any other festivity. Original songs and grotesque speeches kept us up to a late hour. I made a speech in German which was well received, and I fancy was appreciated more from its zeal than for its philological accuracy. Mitscherlich was too dignified to join in such entertainments, but he had a formal evening reception at which I met all the leading men in Berlin. The hospitality which I then received in Berlin I have tried to repay with interest to young foreigners in this country.

By far the most important event of Playfair's life up to this moment had been his introduction to Professor Liebig. This was indeed the turning-point in his life, for it brought him, whilst still a youth, into contact with the first chemist of his day, and gave him a position in the scientific world which his own work and abilities, great though both were, could not have secured for him so quickly or so easily. It was his old friend and teacher, Professor Graham, who gave Playfair an introduction to Liebig.

Professor Graham to Playfair.

9, TORRINGTON SQUARE, LONDON, *September 30th*, 1839.

MY DEAR SIR,—I lose no time in forwarding the note to Liebig which you desire, and congratulating you upon the agreeable prospect which you have before you. The Professor, I have no doubt, will be most happy to receive you. At present I shall take advantage of your kind offer

to do me service in Germany only so far as to trouble you with a copy of the part of my book just published for Liebig, which, with copies for yourself and Richardson, shall be forwarded to Baillières' agents in Newcastle. You will find that I have made room for a short notice of your discoveries. . . .

Most faithfully yours,

THOMAS GRAHAM.

Playfair has told us how cordially he was received by Liebig, and how the great man was able to pay him a pretty little compliment upon his early discoveries. He has not, however, said anything of the warm friendship which sprang up between them. It was this friendship which led Liebig to entrust the young Scotch chemist with the important duty of translating his great book into English. One or two of Liebig's letters will, however, suffice to show the terms on which the two stood.

(*Translation.*)

Professor Liebig to Playfair. GIESSEN, *August 14th*, 1841.

MY DEAR PLAYFAIR,—Forgive my having so long delayed answering your kind letter. I have been ill for a fortnight, and am still suffering, though better, but can get through very little work, owing to constant visitors.

In the first place, my dear friend, let me express my sincere delight at the fine and pleasant post which you are taking up at Primrose—one which suits alike your talents and your inclinations. In all that you do, do not forget science, and keep fresh and vigorous your taste for mental work, for unless a man is making progress in that which gives nourishment and life to industry he is scarcely in a position to fulfil the demands of his times. You must never stand still, but go ever forward. You ought to let no discovery pass unnoticed, but endeavour to turn every one to account. After satisfying the claims which Mr

Thomson makes on your attainments for his business, you ought not to trade on your experience and your chemical knowledge, but to give advice and help where they can be useful, without caring about receiving any reward. All this will bear rich fruit in the future. Never neglect to make some research every year. You will have sufficient time for this, and it will raise you higher in the eyes of sensible men, and be more really beneficial to your interests than if you tried to make money. Be true to yourself and true to science—this is all that I wish to ask of you.

As regards our book, we will give something on the nature of the soil, not in the book itself, but as an appendix. This will come best at the end of the book. You know I did not wish to write an 'Agricultural Chemistry,' but a 'Chemistry of Agriculture.' I must avoid anything bearing on practical agriculture. All that we can say of the constitution of the soil, all that analysis can teach us on the subject, does not enable us to make a bad soil into a good one. With all our nostrums, we cannot alter the nature of the soil, except at immense cost. We must be content if we restore to the soil that which we take from it, and the latter we can ascertain precisely through our knowledge of the constituents of the *débris* of the plants we grow upon it. This is the task of the agriculturist. In consequence of my observations on the amount of calcium and soda which should be contained in all soils in which cereals thrive, Kuhlmann, in Lille, has made the remarkable discovery that all secondary chalk formations contain calcium. This discovery has been confirmed by Professor Wöhler for the chalkstones of Hameln and Göttingen. I will send you a number of analyses of soils, and list of the plants which flourish best thereon.

Professor Adrian tells me that you are engaged to be married. You must tell me whether this is true, for my wife and I are deeply interested.

Farewell, my dear friend. Write to me again soon.

Your most affectionate friend,

J. v. LIEBIG.

Same to the same. GIESSEN, *November 6th*, 1841.

MY VALUED FRIEND,—I have received the five last sheets of our 'Agricultural Chemistry,' and am delighted to see how cleverly you have adapted your additions to my modes of description. Accept my sincere thanks for the care and conscientiousness which you have devoted to the new edition. The book is rendered thereby much better and more useful. Your style is excellent, and leaves nothing to be desired; all your explanations are clear and easily understood. In short, I am exceedingly pleased and satisfied. I have kept the sheets here instead of returning them, because I had considerable alterations to make; when this is necessary you should always wait eight or nine days (reckoning from the day they are sent off from London), and then if the proofs have not been returned, let the printing be continued. . . . You make me greatly wish to come to England next spring, in order to help with your experiments. . . .

Accept my best thanks for the gooseberries and for the excellent Cheshire cheese. English cheese is the only kind which my weak stomach can digest. No doubt an opportunity will present itself of sending to Giessen; there is no hurry.

Acting on my principle this summer, in the neighbourhood of Frankfort, apple trees have been manured with the residue squeezed out by the cider press, and the results have been extraordinary. Thus many things may be found useful which have been regarded as worthless. M. Dumas has given a lecture in the Sorbonne which is published in the 'Journal des Débats,' in which he has impudently seized upon my theory of the development of plants, rotation of crops, manures, etc. What is to be done? I think it is not worth while to trouble about it. The principal thing is that the truth should pass into the very heart's blood of the nations.

My dear Playfair, write again soon. With my love as ever,

Yours,

Kind regards from Dr Will. J. v. LIEBIG.

Same to the same. GIESSEN, *April 22nd*, 1842.

MY DEAR FRIEND,—Whilst in Darmstadt I received your kind letter inviting me to attend the meeting of the British Association in Manchester. Having returned yesterday from my short journey, I hasten to tell you how deeply I regret being unable to be present at the meeting at the time fixed. You know that no professor on the Continent can undertake so long a journey in June. I cannot reconcile it to my conscience to desert my pupils for weeks when they have come to Giessen for the express purpose of hearing my lectures. Were it not for this moral impediment it would give me the greatest pleasure to spend a few weeks with you, and so many good friends. But what is the idea of holding the meeting in June instead of in the autumn as usual? Do represent to the committee that by fixing their meeting in the middle of the summer all professors and investigators of the Continent are excluded. It is my opinion that in such important scientific meetings the general interest should be considered before that of the geologists, who, of course, need good weather for their excursions. But is it intended to attempt discoveries at the meeting? Of course not; discoveries are to be communicated and interchanged, and in Germany we have always found bad, especially rainy, weather more favourable to our object than fine clear weather. There is more temptation in fine weather to wander off in different directions, but bad weather keeps the party together. This is no joke, dear Playfair, but the simple truth. I don't mean to say that I wish the assembled Society bad weather in the autumn for their own good, I merely mean that such does not injure their main object. I and several of my friends intend to go to England if the meeting can be postponed until September 1st. I should then start from here about August 24th, and should be able with my English friends to attend the meeting at Mainz beginning on September 18th. If the British Association cannot postpone its meeting till September I shall probably come to England after the Mainz

meeting. I am anxious to become acquainted with some of the agricultural districts.

Graham, Gregory, and all British investigators of natural history wish for a postponement till autumn. Do speak to Dr Ransom and Dr Henry, and apply to the Committee. I much wish that you may be successful.

My 'Animal Physiology' is now finished. Gregory will translate it. I am full of apprehension and anxiety as regards my conclusions, because they are obvious only to chemists and not to physiologists. There will doubtless be endless misunderstandings.

With my most cordial regards,

Yours very sincerely,

DR J. V. LIEBIG.

Liebig came to England as he promised in the foregoing letter, and Playfair was able to do something to make his visit a pleasant one, thus cementing the friendship which already existed between them.

Same to the same. GIESSEN, *October 23rd*, 1842.

MY DEAR FRIEND,—The day before yesterday I arrived safely home after my long journey, feeling better than ever before. I met my wife and Agnes at Lille in the best of health. Pelouse came from Paris, and we spent a very pleasant week. From Lille we returned home *viâ* Brussels, Liège, Aix and Cologne. I have before me now the pleasant duty of thanking you, my dear friend, for the many kindnesses which you have shown me during my visit; I can never forget how pleasant and useful that visit has been. I have made the acquaintance of kind and excellent men, and collected a rich store of new experiences. That my journey has been so successful I owe in a great measure to your friendship. After my return to London I spoke to Messrs Taylor and Walton about your journey to Giessen; they are willing to provide the funds for it, so I am looking forward to the pleasure of seeing you here.

I shall now begin at once on the preparation of our 'Agricultural Chemistry,' and should be very glad to have a copy of the notes which you—more careful than I—have collected, if it would not be giving you too much trouble. I will write again to Mr Pusey, giving him my views on the condition of agriculture, and the aids to its perfection which chemistry offers. This I will have printed, and will send you a copy. I found awaiting me a diploma of Honorary Membership of the Royal Agricultural Society. I will send our journal published in Darmstadt to Mr James Hudson, the Secretary of the Agricultural Society in London, and shall hope to receive the English journal in exchange.

The Laboratory is very full this winter, in fact it is overcrowded.

In May, 1893, Playfair delivered the Hoffmann Memorial Lecture before the Royal College of Chemistry, and in doing so gave some interesting personal reminiscences with regard to the great chemists with whom he had been closely associated in his earlier days. "In the present century," he said—

"I have to begin with Dalton, for it was my good fortune to know him intimately, and I can never forget his venerable figure, supported on the arm of Dr Joule, coming daily to hear my lectures at Manchester on the new organic chemistry which had arisen in then recent times. Dalton, Davy, Faraday and Graham, indeed, stand out as shining lights in our century. Davy and Faraday were brilliant investigators, and both of them had a singular charm and eloquence as lecturers. To them we owe largely the popularity of chemistry in this country; but none of these chemists, except Graham, thought of opening their laboratories for the training of students in the methods of research. That was reserved to my own master, the celebrated James Graham. I was a student in his laboratory in Glasgow in 1835 and 1836, and followed him to London as his private laboratory assistant in University College. At that time organic chemistry was little known or studied in this country, and all of us who had means to go abroad used to flock either to the laboratory of Liebig at Giessen, or to that of Wöhler at Göttingen. I need not point out that Baron Liebig exerted an enormous influence on the progress of organic chemistry, both by his own

discoveries, and by those of his pupils from all countries, who were trained to do researches in his celebrated laboratory. In 1840 Liebig published his celebrated work, 'Chemistry of Agriculture and Physiology.' It is difficult to-day to realise the effect that work had in promoting the study of chemistry. It greatly increased the demand for laboratory teaching, and even the older universities found it necessary to provide means for laboratory training. Two years after its publication, in 1842, the illustrious Baron Liebig made a sort of triumphal tour in this country. He visited the Prime Minister, Sir Robert Peel, at Drayton Manor, and paid other visits to the great agriculturists of the day—Lord Spencer, Lord Ducie, Lord Fitzwilliam, Mr Pusey and many others, as well as to most of the chief towns. At all places meetings were held, and Liebig, with his travelling companion, the genial and celebrated geologist, Dr Buckland, had opportunities of disseminating his views on the importance of chemistry to mankind. The tour was a personally conducted one, like Cook's tours in the present day. The conductor and interpreter of the party in fact was a young man called Lyon Playfair, who took care that the effects of the tour should be felt in all the chief centres of Great Britain. The immediate effect of Liebig's tour was to make chemistry a popular science, and to induce colleges to open laboratories for teaching it. The School of Mines was opened in Jermyn Street with, for the time, an excellent laboratory, which was always filled with students; still its purposes were chiefly limited to the professional objects of the college. University College and King's College gave much attention to laboratory teaching. The popular wave of 1842-43 did not soon expend its force, and in 1845 the Royal College of Chemistry arose."

CHAPTER IV.

AUTOBIOGRAPHY CONTINUED.—III. MY LIFE IN LANCASHIRE.

1841 to 1844.

Settled at Clitheroe: Parleying with Labour Rioters: A Lesson in Ventilation: Lecturing at the Manchester Royal Institution: Anecdote of Dalton: An Offer from Faraday: Sir Robert Peel: An Inquiry into Charcoal Iron Furnaces: A Mishap to Bunsen: Edwin Chadwick and His Argument from Satan: Appointed a Member of the Royal Commission on the Health of Towns: Researches into Agricultural Chemistry: Earl Spencer (Lord Althorp): Dean Buckland Through England and Scotland: Mr. Crosse and the Wood-louse: Appointed Chemist to the Geological Survey: An Evening with Stephenson: Recollections of Joule: Impressions of Manchester Dean Buckland and Sir H. de la Beche urge Peel to give Playfair an Appointment—Peel's Esteem for Playfair—Letters from Liebig.

IN the summer of 1841 I found myself established in Clitheroe with my future work to learn; for, though I had some knowledge of chemistry, I had none in relation to its applications to calico printing. The works belonging to Mr Thomson at Primrose, near Clitheroe, were of a high class. He manufactured for the upper hundreds, and not for the millions. I soon learned that this was an error; for, as expensive prints and *mousseline de laine* were going out of fashion, so the demand for higher products was decreasing. Still, the proprietor of the Primrose Works would not change the character of his products, which were of the highest excellence. Mr Thomson was a man of singular talent and cultivation. Had he gone into Parliament he would have been a successful and distinguished politician. His house was

large and luxurious, and his library excellent. His eldest son had already distinguished himself by excellent mathematical treatises; but he did not reside at Clitheroe, and had no connection with the works. None of the children had the talents of the father. I did not look for much support from them. Although they were invariably kind and courteous to me, they saw the mistake of their father in adhering to a declining trade, and thought the new chemist would support him in his mistaken views. There were two daughters in the family, one a confirmed invalid; the other, who was about ten years older than myself, was perhaps the most cultured woman whom I have ever met in my life, and to her artistic tastes and cultivated intellect I largely owe my wider habits of reading, which had hitherto been chiefly restricted to scientific authors. She was an excellent classical scholar, as well as an accomplished artist. When I joined the works, Miss Thomson was engaged in translating a rare Greek work, and illustrating her translation with exquisite etchings. I never heard of its publication. She afterwards married Mr Braun, the well-known antiquarian of Rome, and assisted him in his researches. To me she was a delightful friend, and made my stay in Clitheroe instructive as well as agreeable. I was not treated as an employee, but as a friend of the family, with whom I dined several times in each week.

I had not been in these works above a year when I saw that they were doomed, unless Mr Thomson entirely changed the character of his works, in order to produce for the million instead of for the few. But he was inexorable. His products were known all over Europe for their high excellence, and he could not bear to lower their character or quality. On all other subjects my employer would listen to my advice, but he would not permit me to speak on this subject. There were other print works in the neighbourhood—the Oakenshaw works, superintended by Mr Mercer, a man who would have been a Dalton or a Faraday had he been differently placed. He had been a handloom weaver, but taught himself chemistry, and

revolutionised the calico printing of his time by his practical discoveries. Already he was an old man. I formed with him a warm friendship, and we managed to meet constantly, either at his own house or at a little scientific society which we formed for philosophical talk. An interesting account of Mercer's life, by E. Parnell, was published by Longman in 1886. Mercer's language was powerful, though necessarily provincial. I confided to my friend my fears as to the stability of the Primrose works on their system of manufacturing for a declining demand, and he was convinced that the system was all wrong.

In August, 1842, the great labour riots were passing over Lancashire. Almost every mill had been forcibly closed by the rioters. The only two which remained open were those at Primrose and Oakenshaw. The Government were anxious that they should not succumb to the rioters, and furnished us with a good supply of muskets for our defence. The workmen were drilled, and appeared willing to resist. We had scouts on horseback over the country to watch the movements of the rioters. One of these reported that many thousands were marching upon Mercer's mill, at Oakenshaw, so I drove over to join my friend, and had scarcely reached his house when the mob appeared in irresistible numbers. I offered to parley with them in the first instance, so as to keep Mercer, as the employer of labour, in the background. I told the rioters that though we had shut the gates of the mill, we knew their force to be irresistible, and were quite sensible that they could stop the works. Instead of going down in crowds, and doing much mischief by their large numbers, they might send a deputation to remove the plugs from the boilers, and thus secure the stoppage of the works with the least damage. They had no objection to this proposal if it did not mean treachery. I offered myself as a hostage, and walked into their midst, while they sent a few of their number to secure the stoppage of the works, and this they did without any permanent damage. During my detention the leaders explained the nature of their demands, many of which were reasonable, and were

afterwards conceded. After receiving a couple of sovereigns to buy food, the rioters went away cheering heartily, and telling us they intended to march upon Mr Thomson's works at Clitheroe; though, instead of this, they went to Blackburn. At that town the rioters were met and dispersed by troops. The works at Primrose were never closed, and thus these famous labour riots ended.

Finding it hopeless to stay the fall of the Primrose Calico Printing Works as a commercial concern, I gave six months' notice of my intended resignation, and I and my accomplished friends the Thomsons parted with mutual regret and goodwill. I derived the greatest advantage from my stay at Clitheroe, for it gave me the manufacturing experience which has stood me in good stead all my life. As I had foreseen, the famous Primrose Works were stopped soon after my departure, and on the death of Mr Thomson the family dispersed.

During my stay at Clitheroe I gave several scientific lectures in Manchester, and I was there gratified by an offer from the "Royal Institution" of that town to make me their "Honorary Professor of Chemistry." In accepting this office I determined to fit up a teaching laboratory in that town, and the Institution offered me its cellars rent free for that purpose. They were large and commodious, but were inefficiently ventilated, as I soon learnt to my cost. Pupils came to me in numbers greater than could be accommodated, and I had to secure the services of assistants, one of whom was Dr Angus Smith, so well known afterwards for his researches on air and disinfectants. I had one afternoon three or four organic analyses in operation, the tubes being heated with charcoal. I felt ill and out of sorts, and went to my lodging. Soon afterwards a cab came to take me back to the laboratory. I found to my dismay two of the pupils lying insensible in the area outside, and at once saw they had been poisoned by the fumes of charcoal, as indeed I also had been. Recollecting that the guide at the *Grotto del Cane* uses his dog continuously by dragging the insensible body out of

the cave, which contains carbonic acid in its lower layer, and immersing it in cold water, I instantly dashed a pail of water over each of my prostrate pupils, and to my joy found that they revived. This was a practical lesson in ventilation which I never forgot.

My lectures at the Royal Institution were certainly popular, and attracted crowded audiences. There were many men of sympathetic tastes then living in Manchester, among whom was the great philosopher Dalton, the discoverer of the atomic theory. Dalton was a frequent visitor to my lectures. He was then an old and venerable man, with grey hair and a face much resembling that of Newton. He knew that he was thought to be like Newton, and was proud of the resemblance. He had his Boswell in a gentleman called Peter Clare, a Quaker, as Dalton also was. Clare always gave his arm to the old philosopher, either when he came to my lectures or attended the meetings of the Literary and Philosophical Society. Dalton's mind was then on the wane, and his biographer, Dr Henry, thinks that an incident which I am about to relate could not have happened when he was in full mental strength. The old and venerable philosopher sent for me one day to go to his house, and told me that he was anxious to present me with a copy of all his works, if I would give him a copy of mine. I told him that I would value, as above all price, a presentation copy of his works, but that mine were few and not worth having as an exchange. However, he insisted that I should put an appraisement on what I had to give, and hand over the difference in money, which I think amounted to a little over twenty shillings. I gladly paid this amount, and now possess the works of the greatest of English chemists, with a record in each volume that they had been presented to me as his friend. I thought at the time that this was an example of his simplicity as a Quaker, but I am now inclined to agree with Dr Henry that it was an eccentricity of his failing health. For soon after this we had our annual meeting of the Philosophical Society to elect our President, who of course was always Dr Dalton. On previous occa-

sions the ballot had invariably one vote against him, and it was well known that this dissentient vote was that of the philosopher himself, who used to vote that his friend Peter Clare should be President. At the last annual meeting before his death, the dissentient vote was as usual found in the urn, but, to our amazement, we found that Dr Dalton had voted for the doorkeeper! When Dalton died, on the 27th July, 1844, Manchester gave him the honours of a king. His body lay in state, and his funeral was like that of a monarch.

It is well known that Dalton was colour-blind, and he was the first person to investigate this defect of vision. He always ascribed it to a peculiarity of structure in the retina. When he died his medical man, Mr Ransome, took out one of his eyes and brought it to my laboratory. I took two powders, chrome green and scarlet potassic bichromate, as being the colours which he could not distinguish, but we saw them of the natural colours when Dalton's eye intervened. Ransome, who was a most accomplished physician and a great friend of Dalton, assured me that the philosopher, when alive, would have approved of this experiment being made at his death.

In 1842 Faraday was in the zenith of his glory as a discoverer. I do not think at this time I had ever seen this illustrious philosopher. I was therefore much gratified at receiving from him a letter, which, as it proved the turning-point of my life, I here insert.

Michael Faraday to Playfair.

ROYAL INSTITUTION.
October 10th, 1842.

MY DEAR SIR,—Will you allow me to hope I shall not give you offence if I ask whether the following offer would be worth your consideration — the Professorship of Chemistry in the University of King's College, at Toronto, in Upper Canada? The remuneration would be about £450 per annum, with a house and garden and the usual college advantages. The Professor would be on the Council of the University, of which the Bishop is President. He

must reside at Toronto. There would be a sum of money allowed by the Council for laboratory outfit, etc. Now I am called upon to advise in the matter, and if you are inclined to consider the offer seriously, and are able to go out, I would put you in communication at once with His Excellency the Governor. If not, have the goodness to drop me a line here. Graham mentioned your name to me; and believe that in writing to you, though the offer may be unworthy your attention, still I meant, as far as I am empowered to make it, to testify my respect for you and your attainments.

Ever dear Sir,

Very faithfully yours,

Dr Playfair. M. FARADAY.

The offer was very tempting, as I was a professor in Manchester without a salary and had considerable difficulty to make both ends meet. I therefore went up to London, saw Faraday, and intimated my intention to accept the proposal. On describing my appointment to my various scientific friends in London I found that, instead of congratulating me, they censured me for want of faith in an English career. A few days after, to my great surprise, I received an invitation from the great Sir Robert Peel, then Prime Minister, to visit him at Drayton Manor. As I had not then the honour of his acquaintance, I was inclined to believe that some one was playing a practical joke upon my vanity. The letter had undoubtedly the post office stamp of "Tamworth," and the seal was that of Sir Robert Peel. So I took the letter for identification to Dr Buckland, and found not only that it was genuine but that he also was invited for the same date. Why the great statesman should care to see a young man like myself was to me an insoluble mystery, but I accepted the invitation with much pleasure.

At Drayton Manor I found Lord Lincoln (afterwards the Duke of Newcastle), Dr Buckland, Smith of Deanston, then the great authority on deep drainage for farms, Mr Pusey, the editor of the 'Agricultural Societies Journal,' and

several other people. On the 18th October, the day preceding my departure, Sir Robert Peel asked me whether I felt surprise at his invitation to Drayton Manor. I assured him that my surprise was only equalled by my gratification. He then stated that he wished to know me personally because several men of science had written to him expressing their regret that I had accepted a colonial professorship, and he coincided with them in this regret now that he knew me. I bowed to the great Prime Minister and thanked him for taking an interest in my personal affairs. I was at once censured by being informed that it was his interest in public affairs, and not in my personal affairs, which moved him to take action. This was puzzling, and I waited for the development of the interview. Sir Robert Peel then suggested that when a Prime Minister and other powerful friends desired me to remain in this country, I might have confidence in my future career in England, and might resign the colonial professorship. He then tendered me a memorandum to the effect that if I would abandon the idea of going to the colonies he would make it his duty to obtain for me employment if any vacancy occurred which he might think suitable to my abilities. At the same time he said that this was the first time in his long career that he had ever made an implied promise of this kind. I expressed my deep sense of the honour which he conferred by his good opinion, but I positively declined to accept the memorandum, because his personal appreciation of my capacity to be useful in this country was all that I could desire. This refusal gratified the Prime Minister. He said he would not destroy the memorandum but would give it to Dr Buckland to keep, as I declined to receive it. After Buckland's death his son, Frank Buckland, searched for this memorandum and gave it to me, with various letters relating to it.

Sir Robert Peel never forgot me after this visit, and I may say with pride that he continued to treat me as a friend, notwithstanding the disparity of our ages. The impression which he made upon me is very different from

that which is generally entertained of the great Prime Minister. Usually, he is represented as stately, reserved and unbending. I always found him dignified, frank, courteous, and full of kindness. It is true that even in his own house he was the statesman, absorbed in his work during the hours which he devoted to it. But when these were over he was the most genial of hosts and the most delightful of companions. His fund of anecdote was inexhaustible, and his retentive memory brought it to bear in all conversations. After my first visit I often went to Drayton Manor, and not infrequently visited at Whitehall Place. In the last years of his life he encouraged my visits to him there, and told me never to accept an intimation at the door of "not at home" without sending up my card. I had been with him nearly an hour on that fatal morning, the 29th June, 1850, when he was thrown from his horse.

It is needless to say that after the conversation which I have recounted as to the Toronto chair, I withdrew my acceptance and resumed my duties in Manchester. The British Association had voted a grant of money to inquire into the chemical operation of blast furnaces for the manufacture of iron. Professor Bunsen, of Heidelberg, had already made an important research into charcoal iron furnaces, but as it was obvious that coal and coke furnaces, both in hot and cold blasts, would give different results, an exhaustive inquiry in England became necessary. The British Association therefore invited Professor Bunsen to undertake such an inquiry in this country in conjunction with me. After corresponding with various iron manufacturers I found that Mr Oakes, of Riddings, near Alfreton, in Derbyshire, was the person most likely to give us ample facilities for the research. Bunsen[1] at that time was well known as a chemist, and now is the most distinguished chemist in Germany. His researches along with Kerchoff established spectrum-analysis, and his modes of gas-analysis have been universally adopted. He came on a visit to me in Manchester in 1844, and we arranged the

[1] Professor Bunsen died August, 1899.

method of investigation, and made the necessary preliminary preparations. We went by coach to a small town called Ripley to spend the night before arriving at Riddings. The coach carried away our two hats, which we never saw again. Next morning we went to various shops in Ripley to obtain new hats, but we were told that we had not got "Ripley heads," and certainly we found none large enough; but we ultimately got disgraceful-looking wide-awakes, which made us, with our two German blouses, look like tramps rather than professors. However, we were cordially received and entertained at Riddings House, the seat of Mr Oakes. It was to be a familiar place to me for the rest of my life, because two years later I married the youngest daughter of our host.

The investigation which we had undertaken was peculiarly difficult. The iron furnaces were about fifty feet deep, and from the top there belched a huge flame which lit up the sky at night. Our object was to ascertain what changes took place in the fuel, limestone and iron ore, at every foot, from the top where they were introduced until they reached the hearth where molten iron and slag ran out when the furnace was tapped. We erected a support at the top for malleable iron pipes which were to sink into the furnace with the materials. These pipes being connected, I had their length marked every foot with white paint, so that it was apparent from what part of the furnace the gases were streaming. These gases were collected in glass collecting tubes, which were hermetically sealed by a lamp and duly labelled. This did very well, and answered our expectations, until the iron pipes descended to the hottest part of the furnace, where the air enters by the blast, and there they melted and we had new devices to make. Mr Oakes, the proprietor, was not to be defeated, and by separate gangs of men and great labour, he tapped the sides of the furnace so as to let us draw off the gases by the insertion of lateral tubes. Bunsen was engaged below and I was occupied above passing the gases through water to collect any soluble products, when I was alarmed by being told that my friend had become

suddenly ill. I ran down and saw white fumes coming out of a lateral tube, and Bunsen apparently recovering from a fainting condition. I applied my nose to the orifice, and smelt the vapours of cyanide of potassium, which gave an entirely new light to the processes of the furnace, because this poisonous substance is an excellent reducer of metals.

The results of this investigation were important, and have since led to the introduction of great improvements into the staple industry of this country, although probably the suggestors of them have long been forgotten by the iron trade. The report of the research published in the annual volume of the British Association for 1845 may still be consulted with advantage. It established the startling fact that in iron furnaces worked with coal 81½ per cent. of the valuable fuel escaped from the mouth of the furnace and was wasted. In this particular furnace fourteen tons of coals were daily used, and of these eleven and a quarter tons escaped in the form of gases still capable of being used as excellent fuel. We described how this might be led away and utilised for the various purposes of the works. In about six years after the date of our report, this economy began to be practised in various works, and is now all but universal.

We also showed that as all the upper part of the furnace was "a region of distillation and not of combustion," a valuable amount of ammonia might be collected from the gases by condensing it with acids. No less than two cwt. of sal ammoniac (ammonium chloride) could be obtained daily from a furnace of this kind. It has taken forty years for the iron manufacturers to carry out this recommendation, but they are now doing it.

To scientific men, as well as to iron smelters, the most interesting part of the inquiry was the anatomy of the furnace. By the simple expedients adopted it was shown to be possible to dissect a fiery furnace so as to show the operations in progress at its various parts with the same accuracy as if it had been a small object on the table of a laboratory.

In 1843 I received a letter from Sir Robert Peel stating

that a Royal Commission was about to be issued to inquire into the state of large towns and populous districts, and offering me a seat upon it. The president was to be the Duke of Buccleuch, and among its members he mentioned Lord Lincoln (afterwards Duke of Newcastle), Sir H. de la Beche, Prof. Richard Owen, Stephenson, the engineer, Cubitt, the well-known builder, and Smith of Deanston. I accepted the nomination, which was at the time criticised on account of my youth; but it was soon justified in the eyes of the public, as I took the most active part in the inquiry. As, to this day, the reports of that Commission are consulted as the chief authority on questions of sanitary legislation, it may be useful to explain why it was formed. A veteran sanitary reformer, Edwin Chadwick, had issued, in his capacity as secretary of the Poor Law Commission, a remarkable report on 'The Sanitary Condition of the People.' Chadwick's revelations were so startling that a Royal Commission to ascertain their truth was deemed to be necessary. It was not thought expedient that Chadwick should be a member of the Commission, which was to inquire into his statements, but he was present at our meetings and gave us the benefit of his experience.

Chadwick was a remarkable man, and is the father of modern sanitary reform. He had the faculty of seizing upon an abuse with the tenacity of a bull-dog, and never let it go till the abuse was worried to death. But this self-absorption in a subject carried him into extremes, and he failed to see both sides of a question. Thus, seeing the evils which had arisen in local self-government, he could not recognise its benefits, and magnified the power and capabilities of centralised government. I recollect, on one occasion, trying to argue with him as to the need of throwing greater responsibilities on localities, and lessening the functions of central government so as to make them supervisory rather than administrative. My arguments were met with this stern rejoinder—"Sir, the Devil was expelled from heaven because he objected to centralisation, and all those who object to centralisation oppose it on devilish grounds!" Edwin Chadwick and I,

however, became firm friends, and I gladly recognise him as the great sanitary reformer of the age. He afterwards became the active administrator of the Board of Health, which did excellent work, though it ultimately perished because it could not adapt itself to local organisation. Edwin Chadwick, Rowland Hill of the penny postage, John Stuart Mill, Dr Neil Arnott, and a few other congenial spirits, of whom I was one, formed a small society called "Friends in Council," who dined at each other's houses to discuss questions of political economy during the progress of this Royal Commission.

To return, however, to the Royal Commission. I asked for and obtained the large towns in Lancashire as the field for my work, both because they were the most densely populated, and as I could best work the inquiry with my chemical duties in Manchester. I secured the aid of Dr Angus Smith as an assistant commissioner, and a very able one he proved to be.

My Report on the state of large towns in Lancashire is a proof how earnestly I entered into the inquiry. The effects of bad sewerage, defective or intermittent instead of constant water supply, overcrowded tenements, bad construction of streets, and the abuse of opiates among the working-classes, were traced to their sources. In 1844 the sanitary condition of the kingdom was deplorable. Lancashire, which was allotted to me, as a Royal Commissioner, was especially bad. One-tenth of the population of Manchester and one-seventh of that of Liverpool lived in cellars. In the streets occupied by the working-classes two rows of houses were often built back to back, so that there could be no efficient ventilation; the supply of conveniences was altogether insufficient, and their condition and drainage were shocking. The water supply of all the towns was on the intermittent system, and both the supply and the quality of water were defective. Civic powers were split up into a number of discordant and often conflicting authorities, constantly overlapping each other in their duties. Darkness and dirt was the heritage left by the Window Tax, which had recently been

abolished. The mortality was great, and the average age at death was low in manufacturing towns. Thus, if we take Kendal as representing a healthy agricultural town, and compare the average of death in the Lancashire towns at the date of my inquiry, the difference becomes apparent.

	Average Age at Death in 1844.
Kendal	36 years.
Liverpool	20 ,,
Manchester	22 ,,
Ashton	16 ,,
Preston	19 ,,
Rochdale	21 ,,

The death rate of all England was then 22·07 in 1,000 living; in the last decade it was 19·62. The diseases, such as fever, arising from filth—the zymotic diseases—were 4·52 per 1,000 in 1841-50, while in 1880-84 they had been reduced to 2·71 per 1,000. The saving of life in the population, contrasted with the first decade, is about 102,000 persons annually.

I think that the Royal Commission may fairly be credited with having made a thorough exposition of the defects of sanitary appliances in town, and with having laid the basis of that progressive legislation in public health which has produced such a marvellous economy of public life in this country. The construction of streets and houses is now largely improved. Overcrowded and cellar dwellings are prohibited. The common lodging houses are controlled, and an efficient and generally pure water supply is brought into the houses of all towns. Infantile mortality, which was so excessive in 1844 that more than one-half of all the children born in the large manufacturing towns perished before they reached five years of age, is now enormously reduced. Intemperance, which was largely caused by depressing conditions in home life and by overcrowding, has been greatly lessened owing to the improvement of the physical and moral conditions of life.

While residing in Manchester (1844) the important chair of Chemistry in the University of Edinburgh became vacant by the death of Professor Hope. Though

I was too young a man to aspire to such a valuable chair, I was encouraged to become a candidate by some of the leading professors of that University. There were several candidates, but ultimately the contest lay between Professor Gregory and myself. At that time the patrons of the chair were the Town Council of Edinburgh, a singular body for academic patronage, although they generally exercised it with good judgment. After a hard contest, and a good deal of bitterness between our supporters, my friend Professor Gregory was appointed by a small majority, and I returned to my duties in Manchester.

At this time I published a careful paper in an obscure journal in Edinburgh (the 'Northern Journal of Medicine'). This paper has been little noticed, as the journal died after a few numbers had appeared, but I still think it deals with its subject in a comprehensive way. The title of the paper was 'On Sleep, and some of its concomitant phenomena.' The cause of sleep was shown to be diminished oxidation of brain substance. The conditions which lead to this lessened oxidation were fully described, and the relations of wakefulness, dreaming, etc., were discussed. The following quotation from the paper will show its scope :—

"If we now admit the cause of sleep to be a diminished supply of oxygen to the brain, we must admit certain forms of disease, such as congestive apoplexy, syncope, perhaps even catalepsy, to be due to the increased operation of the same cause, not directly but indirectly—a circumstance attested by the diminished temperature of the body in this class of diseases. If, then, we know the effects to be due to a want of oxygenation of brain substance, we are in a position more completely to regulate our practice in the treatment of such diseases."

This paper is republished in a collection of my popular essays, 'Subjects of Social Welfare.'

Whilst the inquiry into the sanitary condition of England was in progress, I still pursued my chemical work in Manchester, and published various papers on agricultural chemistry. Two lectures 'On the Application of Chemistry to the Feeding of Cattle' were given to a meeting of the Royal Agricultural Society, and were

published in its Journal. These lectures were successful, and made me various influential friends. The then Earl of Ducie was a leading agriculturist, and became much interested in my inquiries. I frequently visited him at Tortworth Court, in Gloucestershire, and when in London I usually dined with him on Sundays. Another agriculturist, still more famous, treated me with kindness. This was the Earl Spencer, better known as the famous Lord Althorp, long Leader of the House of Commons. When I knew him he had retired from politics, and devoted himself to the breeding of cattle. I frequently paid him visits at Althorp, and enjoyed its magnificent library.

I recollect on one occasion being considerably startled by a midnight visitor while I was engaged in reading some valuable books which I had taken to my bedroom. I sat up late, long after the other inmates had gone to bed. Suddenly the door opened, and a stout man with a dark lantern and a big cudgel appeared in my room. Naturally I thought he was a burglar, and looked round for a weapon of defence. I was soon relieved by being informed that he was the night watchman, who had instructions to go into any room where a light was seen burning after midnight. Lord Spencer was a charming old man when I knew him, looking much more like a farmer than an eminent statesman. The anecdotes of his past Parliamentary life were amusing. He had never been an orator, but his integrity of character gave him wonderful influence in the House of Commons. Agriculture now absorbed all his attention. He kept careful records of his cattle-breeding, and obtained curious results by his careful entries. He believed that the length of time between impregnation and birth depended more on the bull than the cow. He had one bull which always delayed gestation from three to four days beyond the average.

Even Sir Robert Peel, who had all the cares of the State on his shoulders, was bitten by this agricultural revival. On one occasion he invited his tenants and neighbours to meet at breakfast to listen to speeches from his scientific friends. Smith of Deanston addressed them on deep

drainage, Buckland on agriculture, and I spoke on agricultural chemistry. I think that it was on this visit to Drayton Manor in 1845 that the Deanery of Westminster became vacant. Buckland came into my room while I was dressing for dinner, and was anxious for my advice as to whether he should accept it if the Prime Minister offered it to him. He was doubtful whether his devotion to science might not unfit him for this important office. I did my best to remove his doubts by stating that the office was not parochial but chiefly administrative. After dinner that evening Sir Robert Peel offered him the vacant deanery, which was accepted. Buckland was a remarkable man, full of eccentricity; he generally carried with him some curious small animals, such as green frogs or lizards. On this visit his pet was a chameleon, which used to catch flies on the window panes, to the amusement of the ladies. At the Deanery I have dined with him when a monkey, seated on the gas-bracket, used to stretch himself down and grab a dainty morsel from the plate of a guest just as he was about to transfer it to his mouth. Dean Buckland was especially fond of experimenting upon new viands: one could not be sure that a particular dish at his table might not be a hedgehog, a bit of crocodile, or even a slice of rhinoceros. His son, Frank Buckland, possessed this love of experiment and passion for animals in after years. The Dean was so active in mind that he loved all branches of scientific knowledge, though geology was the science in which he excelled and which he enriched by his discoveries. He was to me always a warm friend and delightful companion, and I mourned deeply when the dark cloud obscured his bright mind and obliged him to withdraw from the society that he both loved and adorned.

In 1844 I made a pleasant excursion throughout England and Scotland with several delightful companions. Baron Liebig offered to pay me a visit if I could arrange afterwards to travel with him. Buckland and Professor Daubeny of Oxford joined our party. We began our excursion by going to see the coprolite beds. Buckland

had proved that the coprolites were really the ancient excrement of saurians and other extinct animals, but they had not been analysed. Liebig at once suggested that if this were true they ought to contain phosphate of lime or bone earth, and I sent some specimens to my laboratory at Manchester, where they were found to contain abundance of this valuable manure. Liebig's delight was unbounded, for he saw that the exhausted fields of England might be restored by the use of these ancient remains. This was the beginning of that great industry which continues to the present day.

On this trip we visited various celebrated farms. Among these I was anxious that Liebig should see Lord Ducie's famous model farm in Gloucestershire. Accordingly, I wrote to his lordship and offered a visit, though our party was large. We found that Lord Ducie was in Scotland, but he at once placed Tortworth Court at our disposal, and asked me to fill his place as host. We passed several days at this hospitable mansion, and Liebig was much struck with this visit as a proof of the kindly interest taken in him by the English. We then went to stay with Mr Crosse in Somersetshire. At that time he had much celebrity, for he asserted that animal life could be formed by passing slow currents of electricity through mineral matter, and many persons believed that he had experimentally established this vastly important fact. Mr Crosse lived in a world of his own making. He had a large electrical laboratory, into which electricity was conducted during storms by wires from the high trees of his park, and concentrated in Leyden jars and a prime conductor, upon which as a warning was printed, "*Noli me tangere.*" The servants had been warned not to touch this; but a new housemaid thought she understood the words to mean "No danger to me," and, in dusting it, was nearly killed. At one end of this electrical laboratory was an organ, which was played in accompaniment to the storms! We soon found that Crosse was an enthusiast, though at the same time a man of admirable simplicity and honesty of character. In speaking, his eyes were

raised as if addressing space, and he conveyed the impression of a truthful and unworldly mind. We asked to see the experimental development of animals out of mineral matter. He conducted us to a room very unlike his laboratory. No servant was allowed to enter it, so it was in a dusty, untidy condition. Slow currents of electricity were passing through solutions of soluble silicates, but we looked in vain for any sign of life. Crosse then began to examine the table around the solutions, and produced a living animal from *under* one of the jars. This he declared to be an electrical production, while I unhesitatingly, and, I fear, irreverently, pronounced it to be a *woodlouse* living in the decaying wood of the table! Our faith in these celebrated experiments, which then agitated all England, was thus rudely shaken, though not our faith in the truthfulness of the man, who was too much of an enthusiast to be an accurate experimentalist.

Another visit interested Baron Liebig. This was to Wentworth, the seat of Lord Fitzwilliam. The magnitude of this residence was startling to a German philosopher, especially when he was handed as a joke a small box of wafers, with a suggestion that he should drop them on his way to his room to assist him in finding his way back. During our stay at Wentworth there was a large evening meeting held at Leeds, to give its inhabitants an opportunity of listening to the addresses of the philosophers staying at the castle. Lord Fitzwilliam took us to Leeds in state with his yellow liveries, the carriages having four horses and outriders. On entering Leeds, large four-poster bills, like those for Wombwell's Menageries, attracted our attention; and upon these we found our names in large capitals, as if we were animals in a show. At the meeting Baron Liebig made an admirable speech in German, which was certainly not understood by the people; but after he sat down I repeated as much of it as I could recollect in English. I little thought, in my first visit to Leeds, that I should years later represent that great manufacturing town in Parliament.

The Health of Towns inquiry was drawing to a close,

when Sir Robert Peel offered me an appointment as Chemist to the Geological Survey, vacant by the resignation of Mr Phillips. The Museum of Practical Geology and the offices of the Survey were then in Craig's Court, Charing Cross. As there was no room for a proper laboratory in these premises, one was fitted up in Duke Street, Westminster. I now left Lancashire, and began my life in London. Before commencing my new labours, Sir Robert Peel, with that great kindness which he always showed to me, invited me to meet some of my future chiefs at Drayton Manor. The Duke of Newcastle, who was head of the Board of Works, under which the Geological Survey was administered, formed one of the party. My immediate chief, Sir Henry de la Beche, the head of the Survey, was another. Stephenson, the inventor of the railway system, Follett, the great lawyer, who unhappily died still young in the following year, and Buckland, were also visitors at Drayton Manor. On this occasion occurred that curious incident which is told rather imperfectly in the biography of George Stephenson. As all the world knows, he was originally a coal miner, and spoke with a strong Northumbrian accent. It used to be Sir Robert Peel's amusement to promote discussion among the philosophers after dinner. Stephenson spoke of locomotives, and how their power was obtained. He offered what was then a daring speculation, that the original source of power in steam-engines was the sun, which conserved its force in the plants of which coal is the residue. This is now known to be a truth, but at that time appeared to be inconceivable folly. As the geologists laughed at the theory, Stephenson abandoned the controversy. Next day Sir Robert Peel asked me what I thought of Stephenson's view, because he noticed that I did not take part in the discussion. I told him that the idea was not absurd, and could be supported by good arguments. He then desired me to explain these to Follett, and he would ask him to be Stephenson's advocate at dinner on that day. Follett entered into the spirit of the joke, and readily comprehended the explanations of a

possible correlation of forces. Accordingly, when the discussion was again raised after dinner, Follett turned the tables on the geologists and completely defeated their arguments. Stephenson looked on in amazement, and exclaimed, "Of all the powers in Nature, the greatest is the gift of the gab!" Stephenson often reminded me of my friend Mercer, the calico printer. Both were men of humble origin, and preserved their simple character in future life. Both were men of genius, and of daring speculation on matters of science. I would much like now, when science has so far progressed, to have notes of my evening talks with both these men of genius, in order that I might ascertain whether opinions which I then thought simply audacious are not now supported by modern discoveries.

Before finally taking leave of Manchester I should say a few words as to the state of intellectual society when I resided there. It had long been a town celebrated for its able men. Henry the chemist, Dalton the philosopher, and Fairbairn the engineer had been shining lights.

In addition to Dalton, Joule, the discoverer of the mechanical equivalent of heat, was then in Manchester. He was the son of a brewer in that town, and was partially deformed. Perhaps the following letter to Professor Dewar, of Cambridge, an old pupil of mine at Edinburgh and now successor to Faraday and Tyndall in London, will best explain our relations.

Playfair to Professor Dewar. LONDON, *January 20th*, 1890.

MY DEAR DEWAR,—You ask for some of my memories of Joule from 1842 to 1845, when I was Professor of Chemistry at the Royal Institution in Manchester. The great Dalton died in the autumn of 1844, and had been long President of the Manchester Philosophical Society. He naturally gave an impulse to the study of science in that town, where there was an active band of young workers in research. Joule was, even then, foremost among these, and the names of Binsey, Williamson, Schunk, Angus Smith, Young, and others, show that the spirit of

scientific inquiry was active. We were also stimulated by the fact that Baron Liebig and Bunsen came to pay me visits during that time; they were men to excite research.

Joule was a man of singular simplicity and earnestness. We used to meet at each other's houses at supper to help the progress of our work by discussion. Joule was an earnest worker, and was then engaged with his experiments on the mechanical equivalent of heat. He took me to his small laboratory to show me his experiments, and I, of course, quickly recognised that my young friend the brewer was a great philosopher. We jointly worked upon questions of far less importance than his great central discovery, but he was equally interested. I was very anxious that he should devote his life to science, and persuaded him to become a candidate for the Professorship of Natural Philosophy at St Andrews. He was on the point of securing this, but his personal slight deformity was an objection in the eyes of one of the electors, and St Andrews lost the glory of having one of the greatest discoverers of our age. When Joule first sent an account of his experiments to the Royal Society, the paper was referred among others to Sir Charles Wheatstone, who was my intimate personal friend. Wheatstone was an eminently fair man and a good judge, but the discovery did not then commend itself to his mind. For a whole Sunday afternoon we walked on Barnes Common discussing the experiments and their consequences, if true, to science; but all my arguments were insufficient to convince my friend, and I fear that then the Royal Society did not appreciate and publish the researches. I write from memory only, for I know that later no society or institution honoured Joule more than the Royal Society and its members. Not for one moment, however, did Joule hesitate as to the accuracy of his experiments or his conclusions.

He once suggested to me that we might take a trip together to the falls of Niagara, not to look at its beauties, but to ascertain the difference of the temperature of the

water at the top and bottom of the fall. Of course, the change of motion into heat was a necessary consequence of his views.

No more pleasant memory of my life remains than the fact that, side by side, at my lectures in the Royal Institution, used to sit the illustrious Dalton with his beautiful face, so like that of Newton, and the keenly intelligent Joule. I can give no other explanation than the fact of Organic Chemistry being then a new science that two philosophers of such eminence should come to the lectures of a mere tyro in science. I used to look upon them as two types of the highest progress in science. Newton had introduced law, order, and number into the movements of masses of matter in the universe: Dalton introduced the same into the minute masses which we call atoms: and Joule, with a keen insight into the operation and correlation of forces, connected them together and showed their mutual equivalence.

I do not know whether these memories are of any use to you, but, such as they are, they are at your disposal for your lecture on the friend of my youth.

(Signed) LYON PLAYFAIR.

Prof. Dewar, F.R.S., Cambridge.

So far I have left Playfair to tell the story of his career in his own way. The reader will see, however, that although he gives a brief summary of the facts of his career in these early years, he is silent as to all those personal questions by knowledge of which alone a sound judgment of a man's character can be formed. We see him playing a distinguished part in the company of not a few eminent men, recognised by them as their equal, and sharing with them in important labours for the public good. But nothing is said that calls attention to the fact that when Playfair was offered the important professorship at Toronto, and when he paid his first memorable visit to Drayton Manor, he was still a mere youth. The young

chemist who was occupying a comparatively humble post in a manufacturing establishment in Lancashire is suddenly transformed into the scientific expert, whose opinions are heard with respectful attention by the Prime Minister. But no clue is given to the secret of this remarkable change. As it is my desire to interest my readers quite as much in Playfair's personality as in his work and his achievements, I must in this chapter supplement his own condensed narrative with some particulars gathered from other sources.

It was thoroughly characteristic of a man who was "practical" from his earliest to his latest years, and who always preferred doing to dreaming, that he no sooner returned from Giessen, at the close of his University career, than he looked out for some kind of work which would make him independent of his father—whose means were moderate—and give him the satisfaction of earning his own living. That work he obtained, as he has himself told us, in the calico-printing works at Clitheroe. Mr Thomson, the proprietor, needed a chemist to superintend the dyeing processes in the establishment, and young Playfair was fortunate enough to obtain the post at a salary that was a handsome one, considering his years and the task entrusted to him. Few things were more characteristic of the man in later life than that business-like punctuality which impressed Mr Thomson so favourably at their first interview that he voluntarily made a considerable addition to the sum he had originally proposed to offer to the young chemist.

But for an explanation of Playfair's early success we must look beyond his aptitude for business. The simple fact is that the young Scotch chemist had made a remarkable impression upon nearly all those who were brought in contact with him. Young as he was, he had already done work in chemistry that had made him known to the

greatest chemists of the day. His translation of Liebig's great book had made his name a familiar one to men of science generally, whilst, above all, his own personality had secured for him a place in the esteem of many eminent men which few so young have ever reached. In plain English, before Playfair had been many months in his first official post at Clitheroe, he was generally regarded, not only by the distinguished men of science who at that time lived in Manchester, but by many leading men in the scientific world, as the most promising of all the younger students of his day. In proof of this assertion, the narrative —barely alluded to in his own autobiography—of his introduction to Sir Robert Peel, in 1842, must be given at some length. It is a story equally creditable to the statesman, the young student, and those generous workers in the field of science who—to use the words of one of them—were determined, if they could, to "save Playfair for England."

The story of this episode in Playfair's life may fitly begin with the following letter from Dr Buckland, the eminent geologist and Dean of Westminster, to Sir Robert Peel.

Dr Buckland to Sir Robert Peel. *April 26th*, 1842.

I rejoice in common with a host of scientific friends at the well-merited honour which has been recently conferred on Sir Henry de la Beche. I was pleased to find, at an interview I had with him and Mr Pusey, at the office of Lord Lincoln, last Friday, that his lordship is anxious to find means of carrying into effect the wishes now so prevalent amongst scientific men and agriculturists to urge forward in this country the inquiry which has begun in France and Germany, but hitherto has been much neglected in England, as to the extent to which a knowledge of organic chemistry may be applied to the improvement of agriculture. There seems to prevail at this time a general expectation of great results likely to arise from the applica-

tion of science to agriculture, and a disposition on the part of farmers, unknown till now, to adopt experiments which the practice of their landlords and most intelligent neighbours has shown to be beneficial. At such a moment, one man only has arisen in this country, in the translator of Liebig, who has specially devoted himself, with great success, to the very difficult and most important subject of organic chemistry in its connection with agriculture. I am not personally acquainted with Dr Playfair, but have seen in the hands of Sir H. de la Beche such a certificate in his favour, given when he was recently a candidate for a vacant professorship in Scotland, that in ordinary chemistry he must have few that surpass him, whilst his translation of Liebig shows his pre-eminent fitness for investigations connected with agriculture. I therefore feel confidently that great results would follow from a series of experiments systematically conducted by such a man; and as I am told he has a full knowledge of geology, he might institute experiments upon the selected specimens of each of the principal formations that occur in England, which would serve as pattern or example of the experiments, showing their defects and the means of ameliorating such portions of each formation from which the subject matter of his several experiments may be selected.

Believe me, etc.,

W. BUCKLAND.

This was Dr Buckland's first, but by no means his last attempt to bring the young chemist under the notice of the Prime Minister. There are indications in the correspondence of Playfair during the following months which show that the great geologist had taken up the young man's cause with enthusiasm. He had done so at the instigation of Sir Henry de la Beche, to whose estimate of Playfair's ability reference is made in the foregoing letter. But Peel was not at that time disposed to assist in the creation of a school of agricultural science in this country. The times were not propitious, and he doubted whether Parliament

would be prepared to grant money to agriculturists, except on condition that similar grants were made to other industries. Still Buckland did not despair of bringing Peel and Playfair into direct communication. In the month of October, Playfair received through Faraday the offer of the professorship at Toronto. He naturally communicated at once with his friend De la Beche. The latter felt, to use his own words, that "if Playfair is to be saved for England, there is no time to lose"; and he wrote an urgent letter to Buckland.

Sir H. de la Beche to Dr Buckland.

Ross, Herefordshire.
October 12th, 1842.

My dear Buckland,—This morning's post has brought me information of which I am sure you will join with me in regretting most cordially the cause, at least if the matter takes the turn which it so readily may. Dr Playfair has been offered an American professorship, with £450 per annum, house, garden, and college fees. Neither you nor I would ever regret any good which could befall so talented or worthy a man as our friend Playfair; but to see him thus snatched from us in England when he has, as you know, been so well received and properly appreciated by our leading agriculturists, is deplorable. Here we are at the Museum of Economic Geology, with all things ready to bring Playfair to bear so successfully upon the agriculture of this country. I have a plan to provide for Richard Phillips efficiently, doing real service to the country. I mean in connection with the Fine Arts Committee, their stuccoes, colours, etc.; so that the frescoes (in the Houses of Parliament), if there should be any, may be permanent, and the colours not fly off in half a dozen years. Upon this subject I have already written to Lord Lincoln, who seems, apparently, to have a good opinion of it; indeed, the outlook is clear. The objection to two chemists at the Museum—certainly a very good one—could thus be removed. In point of fact, all seems ready to bring Playfair to bear; and in precisely this state of things comes

this offer from the other side of the Atlantic, sweeping him away.

At least there is only a fortnight (now two or three days less) for his answer, which can scarcely be expected to be otherwise than an acceptance, seeing that there is nothing certain in connection with the Museum of Economic Geology moving. That he would prefer England to America I know full well, and that we have no one at all equal to him for agricultural chemistry we both know well also. Could others do the same? To move through the usual official channels there is no time, so that Sir Robert Peel may be acquainted with the probable loss we may sustain by Playfair moving to the other side of the Atlantic. Having never corresponded with Sir Robert Peel on this subject, it might be considered out of place if I did so now. As you have, I believe, would you, if there should be time after you receive this letter, mention the matter to Sir Robert Peel? A breath from him would put all straight. Playfair's present address is: Primrose, Blackburn, Lancashire. Pray write to him, and see how matters stand, for round about by me here the time may be lost.

Very sincerely yours,

H. DE LA BECHE.

It is unnecessary to comment upon the singular earnestness of this letter. Evidently De la Beche was desperately afraid that Playfair's departure for Canada—or, as he vaguely describes it, America—would mean a grave loss to the intellectual capital of Great Britain. Nor was Buckland less anxious to act for the purpose of retaining Playfair in this country. He communicated at once with Sir Robert Peel, with the result that Playfair received from the Prime Minister the letter which at first puzzled him so greatly.

Sir Robert Peel to Dr Playfair.

DRAYTON MANOR,
October 13th, 1842.

MY DEAR SIR,—Will you give me the pleasure of your company at Drayton Manor for as long a time as you can

spare me? If you will come to dinner on Wednesday next, you will, I trust, meet Buckland and De la Beche.

Very truly yours,

ROBERT PEEL.

In the preceding chapter of Reminiscences, Playfair has given a brief account of this visit to Drayton Manor. The explanation of the reason which led the Prime Minister to address such an invitation to a young and little known chemist is, of course, to be found in the urgent advocacy of his claims by eminent men like Buckland and De la Beche. No record exists of the conversation which took place regarding Playfair during the visit to Drayton; but it is clear that Buckland urged his claims with persistency, and that he adopted the suggestion of Sir Henry de la Beche that a place should be found for Playfair at the Museum of Economic Geology by the removal of Mr, afterwards Sir, Richard Phillips to another post. Nor was Peel altogether disinclined to adopt this suggestion, as the following memorandum in the Prime Minister's own handwriting seems to prove.

DRAYTON MANOR, *October 18th*, 1842.

We, that is Lord Lincoln and Sir Robert Peel, understanding that unusual decision is required, are ready to consent to this:—If Mr Phillips can be induced voluntarily to relinquish the appointment he holds, and shall signify by a letter to Lord Lincoln his willingness to resign it, Dr Lyon Playfair shall be appointed to a corresponding office at the annual salary of £400. We cannot take any step for the purpose of inducing Mr Phillips's retirement. It must be voluntary on his part.

This, it will be admitted, was a remarkable document to come from a Prime Minister under the circumstances. When Peel handed it to Playfair, he told him that during

his whole official career he had never entered into such an understanding before with an applicant for office. Mr Phillips, however, was not disposed to retire voluntarily, and the ardent De la Beche, still intent upon retaining Playfair in England, tried to devise some means for inducing Mr Phillips to make way for his *protégé*.

The subsequent story of the negotiations for this purpose is a curious one. De la Beche, writing on October 19th to Buckland, makes the following suggestion for the purpose of procuring the retirement of Phillips :—

He (Phillips) now gets £200 per annum, with some little advantages for analyses, which I do not think amount to £40 or £50 more. He has also private chemical engagements. His office hours at the Museum interfere with the latter. To induce Phillips to resign, something equivalent at least will have to be offered : something equal to £250. It is quite clear that Sir Robert Peel will keep himself clear of all inducements to the resignation of Phillips; and in this he is most perfectly right. If he did, it might be made the handle for misstatements. The movement for Phillips to resign must therefore be made on the part of those who desire to see agricultural chemistry properly treated for the benefit of the agriculture of this country. It appears to me that it would be most creditable to the English Agricultural Society, and greatly to the interest of its members, that the present opportunity should be seized. Taking your view that £200 per annum might be given by them to Phillips for the analysis of mineral manures and of subsoil rocks, the state of things would stand thus :—An opportunity of greatly advancing the agriculture of the country by a proper and judicious application of chemistry to agriculture, aided by geological investigations, now presents itself. Will the English Agricultural Society avail themselves of it at a cost of £200 or £250 per annum ? The total salaries of the competent parties are required to be £600 or £650 per annum. Government seems willing to place a highly competent

chemist in an office where this matter can be proceeded with, provided the present holder of that office voluntarily resigns it. Now, though the holder of that office is not skilled in agricultural chemistry as a whole, parts of the general subject he is highly competent to investigate. Would the Agricultural Society, by taking the present holder of the office into its pay at a rate of salary equivalent to the present salary of that office, enable the other party, highly skilled in organic chemistry and the general subject, to enter into that office ?

This proposal on the part of De la Beche did not meet with the approval of the Royal Agricultural Society. Mr Pusey, the secretary of the society, expressed his earnest desire to advance Playfair's career ; but on consultation with the leading members of the society it became clear that they were not prepared to confer upon Phillips the appointment suggested by Sir Henry de la Beche.

Even then De la Beche refused to give up the hope of securing Playfair's services. There was no place in the country, he declared, where chemical and geological agriculture could be carried out at all equal to the Museum of Economic Geology, if a properly qualified chemist could be found. Such a man they had in Playfair—one who possessed all the requisites, and who was approved of by the Prime Minister himself. He now proposed that Playfair should be at once taken into the public employment at a salary of £200 a year, and that he should be asked to report upon the state of British agriculture as regarded agricultural chemistry, practical farming, the variety of soils, and other similar matters, he being allowed at the same time to use the laboratory at the Museum of Economic Geology. Phillips was of course to be retained under this proposal in his old place at his old salary, though as a matter of fact the chief part

of the work which was required would be done by Playfair. It was an ingenious scheme, but it failed to meet with the approval of Sir Robert Peel, though in writing to Dr Buckland the Prime Minister once more expressed his desire to help Playfair. "We are all," he wrote—"that is, all official men—inclined to do whatever we can, consistent with our duty, and therefore with the true interests of Dr Playfair, to procure his services for the public."

I have told the story of this important episode in Playfair's life with sufficient fulness in order to show how high was the place he had already secured in the esteem of distinguished men of science, and how fortunate he had been in attracting the attention and securing the goodwill of Sir Robert Peel. Before I close this chapter, and this record of the failure to procure for Playfair a post in which he would unquestionably have been able to do good service to the cause of English agriculture, it may be well to set forth at length the letter to Dr Buckland, in which, at the request of the latter, he indicated the work he was prepared to undertake if he had secured the appointment of agricultural chemist.

Playfair to Dr Buckland. *October 16th, 1842.*

MY DEAR DR BUCKLAND,—A few days since, I received through Dr Faraday the offer of a professorship in Toronto from Sir C. Bagot. The salary offered is £450 per annum, besides a house, garden, and fees of students. As I am required to give my final answer before Tuesday next, I should esteem it a great favour if you were to lay before Lord Lincoln the reasons which compel me to ask his lordship for a decision with respect to the negotiations alluded to by Sir H. de la Beche. I beg, also, to describe some of the objects which I think are desirable in the event of an agricultural chemist being appointed in connection with Government.

The great object which should be held in view by an agricultural chemist connected with Government is to promote the *general* interest of English agriculture, and not the *particular* interest of its individual cultivators.

There are many laws which must be discovered before agriculture can be rapidly advanced on scientific principles. Analyses of the manures used in England have to be executed in connection with the economic geology of the country. Above all, it is necessary to ascertain the substance which plants take from soils; for, without this knowledge, we do not know what to return to the soil as manure. Analyses of the food of cattle are requisite in order to show us wherein their nutriment consists, and thus enable us to economise our food. No such analyses are extant, and it is thorough and accurate analysis that is needed. Such an analysis, to be properly performed, requires five days' work. By fixing the above rate, those only would send soils for analysis who wanted some important question solved. But as this working for individual interest would be taking away the labours of the chemist from those of general interest, it should be permitted to the Director of the Museum and to the chemist to refuse such analyses, if they found that no good could arise by their execution.

It is a great complaint that there is no place in England where students of agriculture may acquire a thorough knowledge of agricultural chemistry, and of its manipulations, in order that they may conduct their own farming on scientific principles. I therefore think it would be very valuable to admit a few laboratory pupils, at a very moderate fee, such as £20 each per annum, to the chemist, besides the cost of materials to the Museum (the usual fee in London is £50).

Such are my opinions of the duties of an agricultural chemist—duties, as I conceive, well fitted for the advancement of agriculture. Unless he is put above the necessity of making money, he can be of little use to *general* agriculture.

Feeling convinced on this subject, I may mention the conditions on which I should accept the appointment in the event of his lordship doing me the honour to put it in my power.

1. That I should receive a fixed salary from Government of £400 (four hundred pounds) per annum.

2. That I should receive the fees for those private analyses which it was thought expedient to make, and also for the lectures and private pupils. (The fee for the lectures will, of course, depend upon their number, but the fee for the analysis of a soil not to be below £5.)

3. That I should not be required to undertake any general analysis of English soils. Understanding that this has been suggested, I must strongly state my opinion that no benefit could accrue for the present from such a course, and that the usefulness of an agricultural chemist, in such a case, would be destroyed.

As my great desire is to be useful to scientific agriculture, I have made these stipulations in order that time might not be wholly employed in working for individual benefit. By doing so I certainly could obtain more money, but it would be at the sacrifice of general good, and I feel convinced that the plan I have proposed is one which will prove of real utility to agriculture.

I am,

My dear Dr Buckland,

Yours very sincerely,

LYON PLAYFAIR.

That Peel valued his friendship with the young chemist and attached value to his advice, is proved by the correspondence of the great statesman himself. Thus, in writing to Prince Albert on December 17th, 1844, Peel says: "I have some very distinguished scientific men on a visit here —Dr Buckland, Dr Lyon Playfair (the translator of Liebig), Professor Wheatstone (the inventor of the electric telegraph),

Professor Owen, of the College of Surgeons, Mr George Stephenson, the engineer. . . . I invited yesterday all my principal tenants to meet them at dinner and acquire information, which was most kindly and liberally given by all the philosophers on points connected with vegetation, manure, the feeding of animals, draining, etc." Again, in December, 1845, Peel writes, at the crisis in the history of the Corn Laws: "The accounts from Ireland in the month of October, from the Lord Lieutenant, from the constabulary, from the men of science whom we sent there to investigate the facts—Dr Lyon Playfair and Dr Lindley, the first chemist and first botanist—were very alarming. The worst account was from the men of science."

The part which Playfair had subsequently in bringing Sir Robert Peel to his momentous decision with regard to the duties on food will be dealt with in a later chapter; but it is worth while to give the foregoing extract from Peel's letter to the Prince Consort at this point, in order to show how high was the position which he assigned to Playfair in the scientific world.

The first Government appointment which Playfair received was, as he has told us, the post of a Member of the Royal Commission to inquire into the Health of Towns. On April 21st, 1843, Sir James Graham, then Home Secretary, wrote to Playfair to express his gratification at his having accepted this appointment, and to state that his work would not in any way interfere with his post at Manchester. There is little that one need add to the brief account which Playfair has himself given of the work of that memorable Commission. It marked the real beginning of sanitary science in the United Kingdom. Many eminent men had paved the way for its operations, including both Chadwick and Dr Southwood Smith. When it began its work it is hardly an exaggeration to say that it

found every English town little better than a vast cesspool. Before its recommendations had been fully carried out, our towns had become practically what they are to-day. The death-rate had been diminished everywhere, and the conditions of life had been made infinitely more wholesome than they had ever been before. It is not surprising to find that from the beginning of his connection with this great Commission, Lyon Playfair became absorbed in the question of the improvement of our sanitation. The youngest member of the Commission, he was naturally not the least ardent, and threw himself with his whole heart and soul into the work which had been entrusted to him. Before long he became the recognised leader of national enterprises for the improvement of the public health.

J. von Liebig to Playfair. GIESSEN, *November 15th*, 1842.

MY DEAR FRIEND,—Many thanks for your kind letter of October 30th, and the important news contained therein. I hasten to say how heartily I wish that all our desires may be fulfilled. I have read in the papers that you went with Buckland to see Sir R. Peel, and I hope the best from this visit. I hear that Sir R. Peel also intended to send me an invitation; if I could have his note I should value it for the sake of the autograph. May Heaven give you the needful courage for your first lecture. You have a natural gift of eloquence, and for the rest I have not much fear.

The new edition of 'Agricultural Chemistry' will receive many alterations, but I cannot yet quite define them. I cannot therefore leave to you the preparation of the first sheets, much as I should like to do so. I have to add a new chapter on Sulphur, and this must come quite near the beginning.

I will consider your proposal to add a chapter on fattening of cattle. It might be useful.

You have at Lord Ducie's the best opportunity of

determining on a large scale the constitution of the *débris* of straw, potatoes, and roots. Do not neglect this opportunity, as it will be useful to us in 'Agricultural Chemistry.' It will doubtless be easy for you to arrange for the drying of the roots, etc.

I will answer the rest of your letter more fully after your return to Primrose. In any case I shall hope to see you here in the spring.

Yours most cordially,

J. v. LIEBIG.

Same to the same. GIESSEN, *March 3rd*, 1843.

MY DEAR FRIEND,—I have not yet answered your last letter, as I have been very busily engaged on the preparation of our 'Agricultural Chemistry.' The book is now ready, and you will have already received two sheets of it. I have added five new chapters; on the origin of arable land, on the formation of ammonia, on the part taken by nitric acid in the nourishment of plants, and on fallow ground. The chapter on cultivation and rotation of crops is quite new. Thus, you see, this edition is practically a new book. Will you be so good as to bring the English version into line with the German at once? I am very anxious that the book should not lose its scientific character; it is not intended solely for agriculturists, but for the general public. It is specially necessary for those people who desire to understand the book to gain first some elementary knowledge of chemistry; this I do not wish to bring into the book, which is thereby differentiated from Johnston's and other books for farmers.

I must tell you that Dr Will intends to apply for the post of chemist to the Agricultural Society of Scotland. Will is fond of England, and is quite the right man to carry out the researches desired by the society. Should you have any opportunity of assisting him in this direction, he will be very grateful. We have discovered here some excellent new methods for the analysis of ashes

Write to me again soon, and tell me a little about the post you applied for in London. I hear that you gave two lectures in London with great success, and am surprised that they did not lead to the desired result.

Farewell, my dear friend.

Ever yours,

DR J. V. LIEBIG.

CHAPTER V.

AUTOBIOGRAPHY CONTINUED.—IV. BEGINNING OF MY LONDON LIFE.

1845 to 1850.

Settled in London: A Call from Sir James Clark: Sir Henry de la Beche: Distinguished Colleagues: Inquiring into the Sanitary Condition of Buckingham Palace: Reporting upon the Best Coals for Steam Navigation: Mining Accidents: The Potato Famine in Ireland: Effect of Emigration upon Potato Production: Marriage: Oersted: A Letter which led to the Foundation of the Petroleum Industry: Inquiring into the Cholera: The Duke of Wellington and the Chartist Demonstration: Sworn a Special Constable: In Paris during the Revolution of 1848: Louis Blanc and Louis Napoleon.

ON going to reside in London, I took rooms together with my friend Andrew Ramsay (now Sir Andrew Ramsay) in York Road, Westminster. The house belonged to a most respectable middle-aged woman, who had a brass plate on the door: "Mrs P——, Dressmaker and Milliner." Soon after our arrival there a handsome carriage with brown liveries stopped at the door, and a tall, attractive man was shown to our sitting-room. He told us that he was Sir James Clark, the well-known Physician to the Queen. After a few friendly remarks, he explained that one object of his visit was to tell us that the street in which we lived was of doubtful fame, while the brass plate on the door increased the appearances against us. We took his friendly advice, and changed our lodgings to Brompton, near the Consumption Hospital. This was the beginning of a friendship with Sir James Clark which I much valued for many years, and which I continue by descent

to the present day in the person of his son, Sir John Clark. Sir James Clark was a man of admirable character, and was justly esteemed by the Queen and Prince Consort, not only as a physician but also as a confidential friend. Indirectly, he did much for science, for it was he who founded the Royal College of Chemistry, and brought over Hofmann to this country to carry out those splendid researches which have made him so famous.

I have already said that before the Museum of Geology and Geological Survey were transferred to Jermyn Street I had a temporary laboratory in Duke Street, Westminster. Here I continued, in association with Joule, researches into the atomic volume of salts. We established that the water in crystallised salts has the same atomic volume as ice. We also showed that in hydrated salts the volume of the acid disappears, the volume of the base and of the water as ice making up the whole volume of the salt. In highly hydrated salts, such as carbonate or phosphate of soda, the volume of the salt is only that of the solid water, the dry salt occupying no appreciable space. Following these observations into solutions, we proved that the increase in the bulk of a solution, when a highly hydrated salt is dissolved, is only that due to the water of crystallisation becoming liquid, the salt itself occupying no appreciable volume. All this is now accepted as common knowledge, but when these papers were first published they encountered keen opposition.

Another research I made in this little laboratory in Duke Street. This resulted in establishing the existence of an entirely new class of salts named the "nitroprussides." They are obtained by acting upon potassium prusside with nitric acid. They are beautiful crystalline salts, and are now a favourite preparation for pupils engaged in laboratory practice. But the most productive fruit of my laboratory at that time was the discovery of two able men, who have added much to the science of their time. One of my assistants was a young German

named Kolbe. He had a true chemical genius, and I encouraged him, instead of wasting his time as a mere assistant, to make original researches for himself, and he became afterwards the great chemical professor of the University of Leipsic, and was well known by his numerous works. The other was a young student, Frankland, now Sir Edward Frankland,[1] whom I had afterwards the pleasure of seeing as my successor in the School of Mines. He has enriched chemistry by many discoveries. I may claim with some pride that many eminent chemists have been evolved from my teaching, among whom Professor Dewar, of Cambridge, is conspicuous.

In the new building for the Geological Museum and its kindred subjects we found every means for developing the institution. The director, Sir Henry de la Beche, was a man of remarkable ability. He was a well-known geologist, and author of the work, 'How to Observe Geology.' As an administrator he was admirable. He had brought the Geological Survey into a state of efficiency, and was now occupied in forming a School of Mines. He drew around him a staff of enthusiastic and able workers. Andrew Ramsay, my old Glasgow friend, had charge of the Geological Survey. Edward Forbes, the great naturalist, my college friend in Edinburgh, was Professor of Palæontology. Dr Percy, the author of an important work on metallurgy, was professor of that subject. Warrington Smyth was Professor of Chemistry, furnished with an excellent laboratory. To visit the school became a fashion among men of leisure. Besides my regular pupils, I had in one year the late Duke of Marlborough, afterwards Lord Lieutenant of Ireland, Lord Arthur Hay, who became the Marquis of Tweeddale, several Members of Parliament, and two officers of the Guards. The mining students were not numerous, but were excellent in quality. The professors gave courses of lectures to working men in the evening, always attended to the full capacity of our lecture theatre. This school

[1] Sir Edward Frankland died August, 1899.

still continues under the name of the "Normal School of Science," and is now transferred to South Kensington. It has had a continuation of able professors, among whom it is only necessary to mention Huxley, Frankland, Guthrie, Lockyer, Thorpe, Rücker, and Japp.

From my first joining the Museum of Economic Geology at Craig's Court, till the close of my connection with its developed School of Mines in Jermyn Street, my laboratory was not a haven of rest for a scientific man. Unfortunately, my reputation as an inquirer into public questions continually interfered with my scientific career, for there was scarcely a month in which the Government did not demand my services. On arriving in London, the first demand made upon me was to report on the state of Buckingham Palace, and also on the condition of Eton College. The former inquiry was specially important, as it involved the health of the Queen and her young family. The condition of the palace was then so bad that the Government never dared to publish my report. At that time a great main sewer ran through the courtyard, and the whole palace was in untrapped connection with it. To illustrate this, I painted a small room on the basement floor with white lead, and showed that it was blackened next morning. The kitchens were furnished with batteries of charcoal fires without flues, and the fumes went up to the royal nurseries. To prove this, I mixed pounded pastilles with gunpowder, and exploded the mixture in the kitchens. The smell of the pastilles pervaded the whole house, and brought down, as I wished, the high court officials to see what was the matter. The architect was immediately called upon to prepare plans for putting Buckingham Palace into a proper condition, at a considerable outlay, and although Parliament tried to get my report, it was considered too frank and brutal for production, as I treated the sanitary condition of the palace just as I would have done that of any other house. However, the evils were remedied. After this inquiry I was incessantly employed by public departments. The Board of Health required me to report

on graveyards, and to analyse all the water proposed for the supply of towns. The Admiralty placed a sum of money at my disposal to determine the best coals suited for steam navigation. This was a heavy inquiry, for not only had all the chief coals in the kingdom to be analysed and their calorific values determined, but we also had to determine their evaporative values under steam-boilers. During this inquiry I held a second professorship in the College of Civil Engineers at Putney, and the practical experiments with boilers were made at that place under the superintendence of Mr John Wilson, who afterwards became Professor of Agriculture in Edinburgh. The report of Sir Henry de la Beche and myself on the coals suited for steam navigation, for a long time, and perhaps even now, formed the basis of selection for fuel for the Navy.

At this time accidents in coal mines were common and serious. Lyell and Faraday were appointed Government Commissioners to inquire into their causes, and made a report. Their inquiry was a short one, but it drew attention to the recklessness of the miners. As one instance of this, Faraday used to relate that he and Lyell were waiting to see how the coal was blasted by gunpowder, and they sat down, with naked candles stuck in a lump of clay between their legs, until the taphole was finished. Faraday asked where the gunpowder was kept, and the miner replied, "Maister, that be the bag of powder which you are sitting on." Faraday told me that of all the delicate and responsible experiments which he ever made, the raising of that candle steadily between his legs, shaded with his hand to prevent sparks reaching the gunpowder, was the most anxious one. I once encountered a case of like recklessness. I had inspected a mine apparently quite free from gas, and congratulated the owner on its condition. His conscience was pricked, for he confessed he had shown me only the good parts of the pit, but had not taken me to the dangerous "goafs" or cavities where the fiery gas accumulated. Into one of these he took me, first extinguishing my candle, and dragging his own close

to the ground. We both sat down, while the owner of the mine slowly raised his candle till the flame elongated and a blue flickering of fire-damp burned round its edges. Holding it perfectly steady, he calmly said, "One inch higher, and you and I would be blown to the devil!" Needless to say that I steadily depressed his arm and retreated as quickly as possible to a purer air.

Soon after the publication of Faraday and Lyell's report a terrible explosion took place at Jarrow, resulting, I think, in forty deaths. The Government asked De la Beche and myself to visit the mine to report upon the causes of the explosion. De la Beche was unable to go, so I went alone. It was a very deep mine, with many miles of underground passages, all of which were then full of fire-damp. There was only one shaft, and the brattices, or wood lining, had been destroyed by the explosion, so that neither a platform nor a basket could be lowered. There had been no ventilation since the accident, and therefore there was no possibility of clearing the air-passages from the fiery gas. The viewer, or manager, of the mine, while expressing his willingness to descend, put the responsibility upon myself and upon one of the geological surveyors, Mr Williams, who volunteered to join me. After consultation, a stream of water was turned into the shaft to send down air by its descent. I confess that my courage required screwing up, when a rope with two loops was produced, and I was asked to put one leg through the lower one, while the viewer put his through the one above. This is a mode of descent well known to miners, but I had never seen it, and was not comfortable in its use. However, we were pushed off the bank, and were very slowly lowered down the mine, which was about twice as deep as the height of St. Paul's Cathedral. The brattices were much shattered, and we had to turn our lamps on these to see that the rope did not slack on an obstruction, which would have sent us down with a run.

It was a dreary downward journey, with a cascade of water dashing over our heads, and the darkness made

more dense by the feeble light of our two Davy lamps. However, every journey has an end, and we reached the bottom in safety. Mr Williams and a volunteer miner followed, and joined us at the bottom of the pit. All the passages were filled with an explosive atmosphere of fire-damp mixed with air, so we had to regulate our pace by that of the current of air driven down by the cascade of water. There was no difficulty in doing this, because when we went too fast the fire-damp burned inside the Davy lamps. The effect of the explosion had been terrific, and the flame must have burnt some time in the passages, for their walls were coked to a depth of a quarter of an inch. Even during our inspection the hissing of the fire-damp from the pores of the coal was an unpleasant sound. An inspection under such circumstances could not be exhaustive, but we made it as complete as possible. On returning to the shaft we were again drawn up by the loops in the rope, the most uncomfortable saddle on which I ever rode. At the top we found three miners in working dress, who told us that they had made ready to search for our bodies, as they did not expect us to come up alive. This was an uncomfortable assurance, but it was made in a brave and kindly spirit.

At that time the composition of fire-damp was not accurately known, so I determined to collect specimens of it from various mines after making the necessary apparatus on my return to London. I succeeded in obtaining a good many specimens, and published the analyses of them in the 'Records of the School of Mines.' The main part consisted, as was well known, of hydrogen carbide, but it is always mixed with nitrogen, a small proportion of carbonic acid being occasionally present.

As I shall not have occasion to speak of mines again, I may as well say that the knowledge of them thus acquired stood me in good stead many years afterwards. A great strike of colliers was imminent in the Newcastle district in a period of depression, when its effects would have been serious to the poor miners. Masters and men agreed to

submit the dispute to my arbitration. At that time I was in Brittany, but I at once returned, and had the happiness to make an award which averted the strike.

It will be seen that my work was drifting into applied science. Public work with little reference to science was constantly forced upon me. Thus I had to report on the foul state of the Serpentine in Hyde Park, and to suggest remedies. A more important inquiry, and one which proved to be the last straw to break the back of the protective duties on corn, engaged my attention. In the autumn of 1845 the potato rot spread rapidly in Ireland, and engaged the anxious attention of Sir Robert Peel's Government. The Prime Minister wished to consult me upon the chances of the famine, and invited me to pay a visit at Drayton Manor. On the day after my arrival we walked in the garden and discussed the chances of a serious famine. I gave a gloomy opinion, as the Irish at that time lived chiefly on the potato, and there was little variation of crops to take its place. He told me that he shared my apprehensions, and desired to know the true condition of the potato disease, in order to concert proper measures for the relief of the people. He asked whether I would go over to Ireland, and desired me to name two men in whom I had confidence, to act on a Commission of Inquiry. At luncheon I named Professor Lindley, the eminent botanist, and Sir Robert Kane, the head of Queen's College at Cork, author of the 'Industrial Resources of Ireland.' I went up to London the same afternoon to see Lindley, and next day we started for Ireland. I told Sir Robert Peel before leaving Drayton Manor that I had no hope of suggesting any remedy for the disease, and that all I really expected to attain was a true estimate as to its magnitude, and as to its future consequences on the population. He stated that he did not expect more, but desired that I should write to him daily as to the information which we collected. It is clear now why this was urgent.

It was impossible, if a famine were imminent, that high protective duties on the food of the people should be

maintained, and Sir Robert Peel was then in the act of forming that high resolve, the crowning glory of his life, that he would abandon all the old traditions of the Conservative party of which he was the leader, and accept the views of the Anti-Corn Law League that the bread of the people should be untaxed. The Commission of Inquiry did little to stay the progress of the disease, although the constabulary reported that our recommendations for storing the potatoes led to a lessening of the rapidity with which they were attacked. But we obtained too full confirmation of the disastrous character of the famine, and held out no hope that the results on the population would be less severe than had been anticipated. Indeed, these anticipations were too sanguine. I attended a committee of the Cabinet on my return, and I mentioned my fears that the gravity of the situation was scarcely realised by its members. Sir James Graham, the Home Secretary, interrupted me by saying, "The gravity not realised! I believe that Ireland will be decimated by the famine!" I replied, "Your estimate justifies my remark, for if you add forced emigration to actual deaths by starvation and disease, decimation does not represent the loss of population which will be the result of the famine." Unhappily, this was not exaggerated. The population of Ireland was then 8,250,000, and by the census of 1851 it had fallen to 6,552,385.

It has often been brought as an accusation against Sir Robert Peel that he was slow to recognise the magnitude of the calamity. The following letter to me before I left Ireland shows that he did not lose a single day after the facts were established.

Sir Robert Peel to Playfair. WHITEHALL, *29th October*, 1845.

MY DEAR SIR,—I am indeed sorry that you are compelled to make so unfavourable a report, but the knowledge of the whole truth is one element of security. I lost not a moment in directing that by the first opportunities instruction should be given to the effect you

suggest to the several consular authorities in the Mediterranean, Portugal, Spain, etc.

Very truly yours,

Dr Lyon Playfair. ROBERT PEEL.

One week later, the 6th of November, Sir Robert Peel proposed to his Cabinet to open all the ports for the admission of grain at a small duty. The Cabinet rejected his advice, and the responsibility of delay rests upon the other Ministers.

The famine was not an unmixed evil to Ireland. A large portion of the population then lived mainly on potatoes, and in such a diet there was not a sufficient supply of flesh formers for a full day's work. Four ounces of flesh formers are required for that purpose, and to obtain it from potatoes alone nearly 10 lb. must be consumed. In bulk this is beyond the capacity of the human stomach. At the most 5 lb. formed a full diet, and thus an Irishman's labour, fed on potatoes, was worth only half the wages of a well-fed workman. In reality their wages then did not exceed one shilling per day. The famine destroyed their reliance on the potato as a staple food, and compelled the Irish to live on more nutritious kinds of diet. Then they became capable of giving more labour, and their wages rose in a corresponding degree. As the population lessened, the production of potatoes per acre decreased. Before the famine I constantly found the produce to be six or seven tons per acre, and perhaps the average produce was about five tons. At the present day the average produce of potatoes in Ireland is only half that, or 2½ tons. The reason for the decline is curious. It is a canon in agriculture that the best manure for any crop is the refuse of the animal which lives upon it, because all the mineral ingredients taken away by the crop are returned in due proportion to the soil. When the Irish lived on potatoes they manured the land with their household refuse. But when the people emigrated they took their manurial value with them, and the diminished population did not supply sufficient manure for the crops.

In Great Britain the deficiency is supplied by the importation of foreign manures, but in Ireland this is not done. Consequently, though the crop of potatoes in Great Britain remains as large as it was before the year of famine, that of Ireland has lessened to half the former amount.

In the year 1846 I was married to Miss Margaret Oakes, the daughter of Mr Oakes of Riddings House, near Alfreton, at whose works Bunsen and I made our investigation into the chemical operations of blast furnaces for the production of iron. Unhappily, my wife died a few years after our marriage, leaving two children. The younger of these is now Major George Playfair of the Royal Artillery, and the elder, Jessie, first married Captain Peel, who was the son of Mr Peel, long Member of Parliament for Tamworth. He was cousin to Sir Robert Peel, the Prime Minister, to whom I have had so many occasions to refer. Some years after Captain Peel's death my daughter married Colonel, now General, Robert Macgregor Stewart, C.B., A.D.C. to the Queen.

The British Association met at Southampton this year (1846), and was attended by the illustrious Danish philosopher, Oersted, who divides with Faraday the glory of establishing the science of electro-magnetism. Oersted made the original discovery, which he announced in the following words:—"There is always a magnetic circulation round the electric conductor, and the electric element, in accordance with a certain law, always exercises determined and similar impressions on the direction of the magnetic needle, even when it does not pass through the needle, but near it." In this pregnant sentence lies the origin of the electric telegraph. Oersted was a man of peculiar fascination, being a poet as well as a philosopher. He was forty-two years older than myself, but we formed a warm friendship, and he corresponded with me during the few remaining years of his life. He invited me to visit Copenhagen, so as to take part in his jubilee in November, 1850, for the celebration of his fiftieth year in connection with the University, and he died in the spring of the following year.

It may be interesting here to quote a letter which I wrote to Mr James Young in 1847, because it led to the establishment of one of the greatest of industries—that of petroleum and its products.

26, CASTELNAU VILLAS, BARNES, SURREY.

Playfair to Mr James Young. *3rd December*, 1847.

MY DEAR YOUNG,—You know that mineral naphtha is a rare natural product, no spring of it occurring in this country, all being imported from the Continent or Persia. Lately a spring of this valuable product has been discovered on an estate belonging to my brother-in-law (Mr Oakes), near Alfreton, Derbyshire. It yields at present about 300 gallons daily. The naphtha is about the consistence of thin treacle, and with one distillation it gives a clear, colourless liquid of brilliant illuminating power. It dissolves caoutchouc easily. My brother intends to set up stills for it immediately; but, as they are iron masters, this would be a separate industry, so I have advised them, if possible, to sell the naphtha in the crude state to chemical manufacturers, and thus avoid carrying on an industry foreign to their occupation. Does this possibly come within the province of your works? If it do, I will send you a gallon for examination. Perhaps you could make a capital thing out of this new industry, and enable my friends to do the same. You are aware that naphtha is now largely used for adding to the illuminating power of gas, and that the tar residue is a valuable product.

Mr Young contracted to take all the product of this spring, out of which he manufactured illuminating oils and lubricating oil. One cold day Mr Young brought to me the oil in a turbid condition, to ask the cause of the cloudiness. It was obvious that it was due to the then rare substance called paraffin. He extracted enough, at my suggestion, to make two candles, with which I lighted my desk at the Royal Institution during a lecture on petroleum and its products. These two candles, which

then cost about twenty shillings each, are the fathers of the great paraffin industry, and of the cheap candles now found in every house, just as the small spring of naphtha in Derbyshire became the parent of the gigantic petroleum industry all over the world. At the Glasgow Exhibition of 1888, Young's Paraffin Oil Company had a large display, in which they showed the original letter given above, with a bust of myself by Brodie in paraffin! My friend Young made—as he richly deserved to do—a large fortune out of the industry.

From 1847 to 1849 my life was that of a professor in the Royal School of Mines, with little incident. It is true that even in these years the Government required my services on Royal Commissions. In 1848-9 a serious epidemic of cholera prevailed in the United Kingdom. I offered myself as a volunteer to the overworked Board of Health, and went to several large towns to organise house-to-house visitations. After putting the town as much as possible in a good sanitary condition, the civic authorities were induced to divide the town into districts, and to visit each house daily to ascertain whether there were any premonitory symptoms of diarrhœa. The visitor was entrusted with simple medicines to check diarrhœa, and then reported the cases to the Health Officer. Where these precautions were carried out the cholera made little headway, and was shown to be a disease which could be largely prevented, though it was difficult to combat if it took root in a locality.

In 1848 I was elected a Fellow of the Royal Society, an honour which is always appreciated by workers in science. This year, 1848, will be remembered for the revolutionary disturbances in Europe. At one time it appeared as if England would be drawn into the revolutionary whirlpool. The great Chartist demonstration on the 10th of April, 1848, was formidable. The Chartists assembled in enormous numbers to march to the House of Commons across Westminster Bridge, but the Duke of Wellington had made such skilful arrangement of the troops, although they were chiefly concealed from public view,

that the Chartists recognised the fact that they were defeated.

The late Lord Salisbury was then Aide-de-Camp to the Duke, and he told me that when the Chartists began their march he galloped in great anxiety to the Duke at the Horse Guards, and found him reading the morning paper. He lifted his head for a moment, and said, "How far are they now from the bridge?" (Westminster Bridge). Lord Salisbury replied, "One mile and a half, sir." The great Duke said, "Tell me when they are within one quarter of a mile," and he became absorbed in his paper. The Marquis of Salisbury went back to observe. When the procession reached the appointed distance he galloped back to the Horse Guards, and again found the iron Duke quietly reading. "Well?" said the Duke. Lord Salisbury reported that the procession was breaking up, and that only small detached bodies of Chartists were crossing the bridge. "Exactly what I expected," said the Duke, and returned to his paper. Immense preparations, however, had been made for that day. Many thousand civilians were sworn in as special constables, and furnished with batons. Even the future Napoleon III. was enrolled as a private constable. Sir Henry de la Beche and I were ordered to patrol Whitehall, and to pass through Scotland Yard to the Strand. We felt the absurdity of having to take charge of the headquarters of the police, so we concealed our batons under our coats. Our orders were peremptory that we were to take into custody any persons carrying arms. We met a pretty nursemaid with a child of four years of age carrying a drum and tin sword, and, much to the amusement of the former, as well as of the police, we took them into police headquarters.

After that we received permission to withdraw from our absurd patrol.

In 1848, and for some years previously, I eked out a small income by writing leaders for various newspapers, and used to write for the 'Morning Chronicle,' the 'Daily News,' and the 'Athenæum.' The 'Daily News' was an energetic paper, and had acquired much celebrity for its

early Continental news. It had already an efficient correspondent in Paris, but its editor thought I might be useful in gathering information during the great week of insurrection and hard fighting in June, 1848. The fighting had been going on for two days before I started for Paris with some friends. We were stopped at Amiens, as all trains were taken up by troops hastening to Paris. However, we made friends with a general, and went up with a long train filled with troops, who sang patriotic songs all through the day. On approaching Paris we heard rumours that the station was in possession of the insurgents, and that artillery was in position to fire on the train. The train, therefore, proceeded cautiously until the rumour was found to be false. Strangers could get little view of the fighting during its course, because the sentinels would not let them approach near the contested parts of Paris. In fact, my visit would have proved without incident had it not been for an accident. I had gone across the Seine in the afternoon to inquire of an English lady, who was married to a French officer, whether she had news of her husband, who was attached to the staff of General Cavaignac. As it became dark before my return, the sentinels at the bridge refused to allow me to pass. Ultimately, an officer of high rank gave me the requisite permission. I had heard musketry firing in the Place du Carrousel, which I had to traverse on my way to the Hôtel Meurice. The cellars of the Tuileries had been overcrowded with prisoners, who were being removed, when they seized the piled-up muskets of the soldiers and tried to escape. The former were soon shot.

All the streets leading out of the Place had lines of sentinels across them, and in trying to pass one of these I was arrested and taken to the guardhouse. The officers there were polite, and brought me coffee, and stated that they would represent my detention to the general on his arrival. The latter, however, was more suspicious of my intentions than his officers, and was inclined to treat me as an insurgent. I was told to shut my hands, and then to open them, but they did not smell of gunpowder.

Fortunately, I had a letter in my pocket from Lord Palmerston to the English Ambassador which I had not delivered. I handed this to the general, who, luckily, could not read English, for the subject of the letter was to ask the ambassador to assist me in finding out what was the composition of the "boulet asphyxien" of the French army. The letter was viewed as a credential, and a guard was given me to take me in safety to the hotel.

For the week that we were in Paris the only meat at the hotels consisted of horseflesh, though I do not think any of the guests knew this at the time. Except that I got a good knowledge as to how barricades are built, and how excited a population becomes in an insurrection, I learned few lessons in Paris.

In the year 1848 I used frequently to meet Louis Blanc, and, like all who knew him, admired his honesty and simplicity of character. One day I found him highly excited. He had been summoned to Brighton by telegraph to see an important person who might be able to do good to France. With him he had a very satisfactory interview, and engaged to meet him that night in Leicester Square at the hotel of the "Prince de Galles." This personage was Louis Napoleon.

On going to the hotel, considerable delay was shown in admitting Louis Blanc to the room of the Prince, and during the period of his waiting many persons saw and conversed with the well-known Republican. At last, on his being admitted, the Prince talked vague generalities altogether different from the conversation at Brighton. Louis Blanc saw that he had been duped, because the purpose of this public visit was to show that there was an understanding between the Prince and the leaders of the active Republicans, so as to secure the votes of the latter in the pending election of the President. Louis Blanc told me that he expressed his indignation in no measured terms, but the astute Prince simply smiled at the success of his trick.

Little of any interest took place in 1849 to which I need allude, but in 1850 circumstances occurred which plunged

me again into public work, and ultimately withdrew me from my position as a professor.

Very few additions need be made to this chapter of Playfair's Reminiscences. He had entered upon the full service of the State, and was now, as he has told us, constantly employed in connection with public inquiries relating either to the practical application of science to agriculture or other national industries, or to the improvement of our sanitary system. Even at the Museum of Geology he discovered that he could render service in the latter field, and we find him in correspondence with Sir Henry de la Beche on the subject of the water supply of Liverpool as early as 1846.

"The whole matter of the supply of water," wrote De la Beche, "is the application of geology and chemistry to the useful purposes of life, and we could prevent much public loss by attention to it. This inquiry (the water supply of Liverpool) is precisely the thing that the combined efforts of the Geological Survey and the Museum may be brought to bear upon; and if it be altogether rejected by us, the power of showing the good that we could effect in this way may be long postponed."

Every day made it clearer to Playfair that his work lay in this practical application of science to the manifold wants of the community.

During Playfair's visit to Ireland, for the purpose of collecting information with regard to the potato famine, he received several letters from Sir Robert Peel, all written throughout by Peel himself, and affording proof of the intense interest which the Prime Minister felt in the condition of the distressed country. The letter in which Peel accepted Playfair's advice as to the action to be taken has been printed on a previous page. Peel was, however, anxious to have a personal conference with him.

Sir Robert Peel to Playfair. WHITEHALL, *November 10th*, 1845.

MY DEAR SIR,—Will you be good enough, on the receipt of this letter, to see Sir Thomas Fremantle, and ascertain whether it is the wish of the Lord-Lieutenant that you should remain in Dublin for any longer period. If it is not, I think you had better repair to London without delay for the purpose of reporting to Sir James Graham, or to me, for the information of the Government, the result of your observations in the country parts of Ireland, and your latest impressions with regard to the present state of the potato crop, and the prospects for the future. We are to have an interview with Professor Lindley this day. Mr Twistleton will not leave London before Saturday next, and you may, therefore, unless the Lord-Lieutenant wishes you to remain in Ireland, have the opportunity, by returning to London, of personally communicating with me on various matters before his departure.

Believe me, my dear Sir,

Very faithfully yours,

ROBERT PEEL.

CHAPTER VI.

THE GREAT EXHIBITION.

Becoming a Publicist—Playfair's Work as a Special Commissioner of the 1851 Exhibition. AUTOBIOGRAPHY: Introduced to the Prince Consort by Sir Robert Peel: Sir Henry Cole: Preparing a New Classification for the Exhibition: A Tour through the Manufacturing Districts: Sir Joseph Paxton: The Exhibition opened: Superintending the Awards of the Juries: The Exhibitor and the Queen: The Commissioners received by Louis Napoleon: Appointed a C.B. and a Gentleman Usher to Prince Albert: The Crystal Palace: An Episcopal Objection to Undraped Statues. Correspondence with the Prince Consort—Investing the Exhibition Surplus—Playfair's Part in the Negotiations—The Scheme described—Appointed Secretary of the Science and Art Department—Organising the Royal College of Science—A Member of the Athenæum.

IN the year 1850 Playfair entered definitely upon that which was to be, in many respects, the leading work of his lifetime. Up to this point, although he had been brought into contact with men so eminent as Sir Robert Peel, as well as with the leading men of science of his time, his work had been confined to his own special branch of study, and it was as a man of science only that he was known to the public. But the impression he had made upon Sir Robert Peel was not that of the mere student and investigator of scientific facts. The great statesman had discovered that Playfair was, above all things, a practical man; that he possessed tact in a degree quite unusual, not only among men of science, but among men of the world; that he was clear-headed, industrious, a master of detail, and an enthusiast in any task he

undertook. Above all, Sir Robert Peel had found that Playfair possessed a wonderful power of surmounting difficulties that would have proved formidable to most men. It was these qualities, even more than his undoubted learning in chemistry, that brought Playfair, in the year 1850, into the full service of the public.

This was the year when the Great Exhibition of 1851—in many respects the greatest of all exhibitions—was in active preparation. In the next instalment which I shall give of Playfair's own Reminiscences, the story of that Exhibition and of his connection with it will be told by himself. But the narrative is incomplete in many respects. Above all, it is incomplete in its failure to do justice to the extent of the services which the writer rendered in bringing the great enterprise to a successful issue. The Exhibition of 1851 was not an incident that, having attracted the attention of the world for a few months, passed forthwith into oblivion. It was the starting-point in the modern history of English manufactures and arts. Even more was it the starting-point in scientific education in this country. Not only did it give an enormous impetus to the movement in favour of the reform of our industrial methods, but it furnished means by which that movement has since been carried forward with a success that has revolutionised our system of technical instruction. "The Commissioners of the 1851 Exhibition" is a phrase which is now familiar to everybody, and it is one that is associated with the origin and development of some of our most important institutions for practical teaching. The 1851 Commissioners may almost be called the "good fairies" who have secured for English industry and English art the position which they now hold in the world. From 1850 down to 1895 Playfair was constantly associated with the labours of this body. More than almost any other man, he represented

its spirit and helped on its work. Before the story of his life is brought to a close, the reader will see how important and valuable were the services which he rendered to the Commissioners, and through the Commissioners to the public at large. It is no exaggeration to say that after 1850 this was, upon the whole, the most useful of all the tasks to which Playfair devoted his superabundant energy and his unique talents.

I shall leave him to tell for himself the story of the manner in which he first became connected with the project of the Great Exhibition. It is only necessary at this point to touch upon its important bearing upon his own career. The first consequence of his new position as a member of the Commission for the Exhibition was to bring him into close contact with the Prince Consort. Playfair has done justice in his own writings to the exalted mind of a prince whose character and services his adopted country has not even yet fully appreciated. But it was not only with the Prince Consort that Playfair was brought in contact by his work in connection with the Exhibition. Lord Granville, who, as President of the Board of Trade, played a conspicuous part in the great enterprise, was thrown into close association with him, and between the two men a warm friendship sprang up, which only ended with death. Many eminent politicians of both parties were associated with the preparations for the Exhibition, and Playfair's circle of acquaintances in 1850 thus became greatly enlarged. In short, he emerged from the relative obscurity of a man of science engaged in the work of a public department, and came into the full blaze of light that beats upon those men who are actively engaged in national affairs of the widest interest. It is time, however, to give Playfair's own account of the Great Exhibition, and his share in its success.

AUTOBIOGRAPHY CONTINUED.—V.

1850 to 1851.

GREAT preparations were now being made for the Great Exhibition, which was to open in May, 1851. I had nothing to do with the inception or original preparations for this undertaking. Various persons claim the merit of suggesting that an Exhibition which was at first started as one for national industries should be made international, and embrace the manufactures of all nations. My own belief is that the suggestion originated with the Prince Consort in consultation with Sir Henry Cole. The Society of Arts organised a committee to carry it out, the active members being Sir H. Cole, Sir Wentworth Dilke, Mr Fuller, and Mr Scott Russell, the eminent naval architect and engineer. It was soon found that the undertaking was too great for management by the Society of Arts, and a Royal Commission was issued containing the most eminent statesmen of both political parties. Outside this Commission there was an executive committee, chiefly composed of the men already mentioned as having been selected by the Society of Arts. I was not a member of either body, and only interested myself in the great undertaking as one of the general public. The industrial classes hung back, and did not give it that support which was absolutely necessary for its success. The Government became anxious, as the Prince Consort was deeply pledged for its success, and the Queen was naturally uneasy. The Prime Minister, Lord John Russell, had anxious consultations with his colleagues, and Lord Granville was deputed to enter into negotiations with me to become "Special Commissioner" and a member of the Executive Committee.

The purpose of this appointment was to have a member of the Executive in attendance at the meetings of the Royal Commission, so as to keep the Consultative Commission and the Executive *en rapport*. I pointed out how

difficult it would be to work under such an arrangement, as it would lead to perpetual jealousies. I had another objection, that it would remove me for two years from my scientific duties, and would probably change my whole course in life, by making me a public man rather than a scientific professor. These objections received the support of Sir Henry de la Beche, my immediate chief, and of all the body of professors at the School of Mines, who did not wish their educational course to be weakened by my withdrawal. Lord Granville, whom I then knew for the first time, but who afterwards became my valued friend, was much disappointed at the failure of his negotiations. Sir Robert Peel, who was a general supporter of the Government, and very anxious for the success of the Exhibition, then urged that he had a claim upon my services, on account of our past relations. This was an argument which I could not resist, as I owed everything to his kindness. He then took me to the Prince Consort, expressing his entire confidence in me, and assuring the Prince that he would find me able to carry out the duties which were proposed. I had only on one previous occasion seen the Prince Consort. His Royal Highness had invented a method of infiltration for sewage, so as to keep back the fertile ingredients and allow the effluent water to pass away. Sir Robert Peel had advised the Prince, before publishing this invention, to explain it to me, and to be guided by my opinion as to its merits. This interview had taken place before these negotiations about the Exhibition, and I fancy now that this reference to me was chiefly to let the Prince see the man who, the Government and Sir Robert thought, should be engaged to co-operate with him in the difficult task of carrying out a great International Exhibition.

At our second interview the Prince explained all the difficulties which were then experienced, and his confidence that they could be surmounted if the Royal Commission had the aid of a member of the Executive in whom they had entire confidence. I again pointed out

how difficult it would be for me to be in a different position from the other members of the Executive, but placed myself at the disposal of the Royal President.

I made a condition with Sir Robert Peel that if I accepted office he would permit me to consult him in any serious difficulties. Many of these occurred, and he encouraged me to visit him. Some of them were with the large manufacturing communities, which desired their own conditions, not always in the interests of the public. On these occasions Sir Robert Peel and Lord Granville used to be present at the deputations, and aided much by their tact and sagacity in meeting or refusing these requests. On the morning of the 27th of June, 1850, I had a long interview with Sir Robert Peel on the affairs of the Exhibition, and in the afternoon all England knew of the accident which led to the speedy death of that great man, perhaps the greatest Parliamentarian that England ever had. I mourned with the public, but I had also to mourn the loss of one who had long honoured me with his friendship.

The mainspring of the Exhibition from first to last was Sir Henry Cole. He was a man of remarkable energy and ability, and had no other object in regard to any work in which he was engaged than the best method of ensuring its success. He has often been accused of working with selfish motives. Never was an accusation more unfounded. The public good was always the uppermost—I might almost say the only—motive in his mind. He was constantly misjudged, because his modes of work were not always on the surface. If he came to an obstacle, it was his delight to tunnel under it in secret, and unexpectedly come out at the other side. His purposes were, therefore, not unfrequently misunderstood, and when I joined the Executive there was much want of confidence between it and the Royal Commission. This was unjust to Cole, with whom I was constantly associated to the end of his life, and for whom I had a sincere respect.

When I joined the Executive of the Exhibition, Sir Henry Cole scarcely knew me, and, like the other

members, was naturally displeased that I was placed in a position of confidence superior to theirs. On the second day after my appointment, I met Sir Henry Cole in Whitehall, at the door of the Home Office. He told me frankly that he was going to see the Secretary of State to resign his connection with the Exhibition, and that his letter of resignation was then in his pocket. I took his arm, and walked up and down Whitehall. On asking him whether he believed the ship was sinking, and that the Exhibition would be a total failure, he frankly admitted that he did, as the state of indifference of the manufacturing districts rendered failure almost certain. I then urged that as he was the real pilot of the vessel, it was a wrong act to desert the sinking ship. The country could be aroused to the importance of the undertaking, and my work could be well separated from his, for I intended to visit the chief manufacturing centres, in order to create a public opinion in its support. Our conversation was mutually satisfactory, and we walked to the Exhibition office together, and his letter of resignation was destroyed. Had the accidental meeting not taken place, the Great Exhibition would never have been held, for its mainspring would have been broken. After this interview, if jealousies still continued, none were ever shown, for all the members of the Executive worked loyally to bring the undertaking to a successful issue.

The classification of the intended Exhibition when I joined it was the following :—

1. The Raw Materials of industry.
2. The Manufactures made from them.
3. The Art employed to adorn them.

The philosophical mind of the Prince Consort held tenaciously to this classification. I, however, strongly urged that, though it was philosophical, it was not practical, and that its theoretical character was, perhaps, the chief cause of the want of sympathy between the promoters and the manufacturers. All the classes of objects to be displayed ran into each other in every

manufacture. Iron ore, for instance, was the raw material for cast iron, while the latter was the raw material for all industries in iron. I prepared, with great labour, a new classification by dividing manufactures into twenty-nine classes, each of which were subdivided into subsections representing the distinct industries. This classification was submitted to leading manufacturers in all the classes, and was revised according to their criticisms. By it we were enabled to see, as the work progressed, whether the Exhibition was deficient in certain industries, and the gaps were filled up by writing to producers.

This classification, the first attempted of industrial work, met with great success, and had the good fortune to be highly commended by Whewell and Babbage, both masters in classification. Ultimately, it was thoroughly adopted by the Prince Consort and the Royal Commission. It had still to be approved by the foreign Commissions. France alone made some objections, as the French Commission had drawn out a logical and philosophical classification for itself. In discussing the two classifications with the French Commission, I pointed out that the best must be the one which the manufacturers could most readily understand, and I suggested that we should fix upon any common object, and see who could most quickly find it in an appropriate division. My French colleague had a handsome walking-stick in his hand, and proposed that this should be the test. Turning to my class of "Miscellaneous objects," under the subsection "Objects for personal use," I readily found a walking-stick. The French Commissioner searched his logical classification for a long time in vain, but ultimately found the familiar object under a subsection, "Machines for the propagation of direct motion." He laughed heartily, and agreed to work under the English classification.

The new classification was sent to all the leading manufacturers in the United Kingdom, and produced a marked change in favour of the Exhibition. They now knew the nature and the objects of the undertaking, and began to prepare for taking part in it. I followed this

up by making an extensive tour through all the manufacturing districts. I used to call on the leading manufacturers, and, after having secured their co-operation, a meeting was summoned of the civic authorities, the Members of Parliament for the district, and the manufacturers, to give a full explanation of the purposes of the Exhibition, and to remove the difficulties which they might experience. Lancashire hung back, but Cobden came to my rescue, and was of material assistance in producing a better feeling. This was my first introduction to this great statesman, of whom I used to see a good deal in the remaining years of his life. Like everyone who knew him, I was much impressed by his singleness of purpose and his tact in overcoming difficulties. These conferences soon created the public support so necessary for the success of the Great Exhibition.

Innumerable difficulties had yet to be removed, in spite of the personal attention which the Prince Consort gave to the work of the Royal Commission. The Government provided no funds, and the amount of subscriptions was ridiculously small. Sir Henry Cole proposed a guarantee fund of a large amount, to enable us to erect the necessary buildings and to meet the large expenses of preparation. Mr Morton Peto (afterwards made a baronet) commenced the fund by a bold signature for £50,000. We then took this paper to the Prince Consort, who said that he would sign for £20,000 if the members of the Executive individually showed their faith in the undertaking by attaching their signatures, which we did for £1,000 each. After that the guarantee fund grew so rapidly that there were no further difficulties in the way of finance, for the Bank of England supplied us with money on the security of the signatures.

I am not writing, however, a history of the Exhibition, but only an account of my personal connection with it. One of our difficulties was in regard to the building. Sir Joseph Paxton had been called into consultation, and proposed a palace of iron and glass. There were, however, difficulties as to this, the main one being that in

the centre of the ground in Hyde Park devoted to the building there were three large trees which the Commissioners of Woods and Forests would not allow to be cut down. I had spent the greater part of the day at Buckingham Palace with the Prince Consort, examining the plans for the building, when Paxton proposed to obviate the difficulty of the trees by throwing a gigantic dome over them. The question arose whether this would kill the trees, and I offered to drive to Turnham Green, where Lindley, the botanist, resided, to obtain his opinion. This was distinctly favourable to Paxton's proposal, and on returning in the evening to the Palace this great feature of the Exhibition building was finally arranged. It was reared with wonderful rapidity, and people began to believe that the Great Exhibition would be at last realised.

But even then the croakers would not cease to frighten the public. Alarms which now seem puerile and absurd were seriously entertained, and had to be dissipated. The great influx of people from abroad was to produce frightful epidemics — perhaps black death, certainly cholera. The large immigration of foreigners, on the pretence of seeing the Exhibition, was to be used as a conspiracy to seize London and sack the great capital. Our industries were to be destroyed by a taste for foreign goods being created, and England's future greatness was to be imperilled to gratify the wish of the foreign Prince who had married the Queen. When the Prince Consort should have been most popular for his unremitting exertions to bring his great conception to a successful issue, he had to encounter the hostility of the aristocracy and the absurd alarms of the middle classes. A literary squib which appeared in a provincial paper helped to allay these foolish fears. The Exhibition was far advanced, the objects were being arranged in their cases, and a few days only had to elapse before the State Opening, when a new scare arose. This was that the three large trees in the dome harboured so many sparrows that all the rich goods displayed would be spoiled by them. The provincial

journal to which I alluded gave the following amusing satire on the final scare :—

"The Prince Consort was in the breakfast-room at Buckingham Palace, moody and unhappy, when the Queen asked the cause of his woe. He explained that after innumerable difficulties had been removed, the sparrows had appeared in such numbers in the Exhibition as to destroy all hope of displaying valuable goods. The Queen then asked whether the Prince Consort had consulted Playfair, and was assured that he had no advice to offer. Thereupon she suggested that Lord John Russell should be sent for. On his arrival at Buckingham Palace, the Prince Consort explained the difficulties in regard to the sparrows, and his lordship at once suggested that her Majesty's Guards should be sent into the building to shoot them. The Prince pointed out that this was an unpractical suggestion, as the result must be that the palace of glass would be destroyed. Lord John Russell then suggested that Lord Palmerston should be called into consultation. When that great statesman arrived he smiled at the difficulty, and proposed that birdlime should be put on the branches of the trees. The Prince Consort observed that this proposal was equally useless, because the sparrows no longer roosted on the trees, but preferred sitting on the iron girders of the building. Lord John Russell and Lord Palmerston now withdrew for a consultation, and finally recommended that the Duke of Wellington should be summoned. A messenger was accordingly despatched to Apsley House, and found that great warrior and statesman in the act of leaving home for the Horse Guards. The Iron Duke was annoyed at being summoned for such an object, and wrote the following letter:— 'Field-Marshal the Duke of Wellington presents his humble duty to her Majesty. The Duke of Wellington has the honour to be Commander-in-Chief to her Majesty's Forces, but the Duke of Wellington is not a bird catcher.' The Duke had no sooner sent the letter than he repented, and, mounting his horse, overtook the messenger, and, taking back his letter, presented himself at Buckingham Palace. The Queen received him with effusion, and the Prince Consort recovered from his despondency. The three Privy Councillors withdrew for a consultation, and on their return the Duke of Wellington oracularly uttered the word, 'Sparrow-hawks.' In the meantime the sparrows had sent out scouts. When they heard that Lord John Russell had been summoned they twittered, and seemed to be amused. When Lord Palmerston went they showed signs of anxiety, but ultimately flew about as usual. When their scouts informed them that the Duke of Wellington had gone to the Palace, all the sparrows congregated in the tree nearest to the door, and as soon as the advice of sparrow-

hawks was communicated they flew in a body out of the door, and the Exhibition was never again troubled with their presence."

This *jeu d'esprit* was the end of our panics, and in a few days the Great Exhibition was opened in state.

There are still many living who recollect that magnificent ceremony. The daïs upon which the Queen and Royal Family stood with their suite was behind the crystal fountain. The trees in full leaf under the high dome, the brilliant uniforms of the Commissioners of all nations, and the vast crowd which filled the entire Exhibition, formed a sight not to be forgotten by those who witnessed it, and familiar to the present generation from numerous engravings. A large choir led by Dr Wylde sang "God Save the Queen" and the "Hallelujah Chorus." The latter was most impressive, and during it a strange incident occurred. A Chinaman, dressed in magnificent robes, suddenly emerged from the crowd and prostrated himself before the throne. Who he was nobody knew. He might possibly be the Emperor of China himself who had come secretly to the ceremony, but it was certain that he was not in the programme of the procession, and we who were in charge of the ceremony did not know where to place His Celestial Highness. The Lord Chamberlain was equally perplexed, and asked the Queen and the Prince Consort for instructions. We were then told that there must be no mistake as to his rank, and that it would be best to place him between the Archbishop of Canterbury and the Duke of Wellington. In this dignified position he marched through the building, to the delight and amazement of all beholders. Next day we ascertained that this Chinaman was keeper of a Chinese junk that had been sent over to lie in the River Thames, and which anyone could visit on payment of a shilling!

There have been many Exhibitions since 1851, and all have been opened with State pageants, but none has ever impressed me with the magnificence of this first Exhibition. Of course, it had the charm of novelty, and this may have been the chief cause of the difference in

effect. My principal work after the opening of the Exhibition was to superintend the awards of the juries. I was entrusted with the organisation of the juries, which consisted of men of all nations. The classes were distributed into groups. A chairman was appointed to each class, and a separate, distinguished chairman to each group. The Chairmen of the Groups formed a Council, which revised the decisions, and was a Court of Appeal. The system worked easily, and there were few serious difficulties, although there were necessarily some from the conflicting national interests. I reserved to myself the right to attend the meetings both of the juries and the Council, but only did so when disputes arose, so that I got nicknamed the "Stormy Petrel," my presence indicating that there was difficulty, which, however, was always removed by tact and judgment.

The Queen and Prince Consort, with the Royal children, were constant visitors to the Exhibition. Numerous incidents of their visits are recalled to my memory. I will only mention one of them. An engraver on glass had spent two or three years on a jar which was divided into compartments. He constantly asked me to draw the attention of the Queen to his *magnum opus*. On one occasion the Royal party passed his stall without stopping. I saw that the exhibitor was in despair, and I asked Her Majesty whether she would kindly go back, which she graciously did. But the exhibitor had now lost all self-possession, and was confused in explaining the meaning of his engravings. To help him, the Queen pointed to a compartment which represented a boy jumping out of a boat to the land, while a large eye peered out of an overhanging cloud. The Queen desired him to explain what was meant. The reply was startling: "The boy, madam, is the Prince of Wales, and the eye is the Eye of God looking out with pleasure for the moment when His Royal Highness will land on his kingdom and become the reigning Sovereign!" The gentlemen in attendance were aghast, but the Queen preserved her countenance till we left the stall, when both she and the Prince Consort

laughed heartily. The latter told me that he only knew one parallel incident. George IV had taken a fancy to a beautiful but silly young lady, and had her frequently near him. On asking her whether she was pleased with the Court festivities, she replied that she was, but that she was dying to see a coronation.

The children of the Royal Family were sent constantly to the Exhibition as a place of instruction, and their visits were so arranged that they should acquire some general knowledge of manufactures. The present Empress Frederick of Germany was then a particularly bright child, and enjoyed her visits, and profited by them. The Prince of Wales and the Duke of Edinburgh were also constant visitors, and took interest in what they saw. Perhaps the lessons learned while a child have helped the Prince of Wales to achieve his great success as President and organiser of the various succeeding Exhibitions which have been brought out under his direction.

In August (1851) the French Government invited the Commissioners to Paris, where we were splendidly entertained. The President, Louis Napoleon, gave a *fête* at St. Cloud, when a singular incident occurred. The orangery was converted into a refreshment room, and the guests, being hungry, were anxious that it should be opened. Suddenly, and in breach of all discipline, the soldiers broke into it and consumed the viands. I made friends with one of the soldiers, and he handed me a fowl, a bottle of champagne, and bread. I was returning with this booty to share with some friends, when I met Lord Granville, who told me it was all arranged, and that a new lunch would be provided for us. I returned my capture, and in due time another lunch made its appearance. This was a singular bid for popularity among the soldiers by the President, who before the end of the year was to use the army in the *coup d'état*. The *fête* was a brilliant one, and was scarcely marred by an incident which at one time appeared to be destructive of its success.

The visits of the Royal children to the Exhibition

naturally brought me into constant contact with them, and laid the basis of that courteous and kindly feeling which they have always since shown me.

It is well known that the Great Exhibition was a financial success, and that the surplus was about £180,000. This was wisely invested in land at South Kensington by the advice of the Prince Consort. It has increased enormously in value. This land is still vested in the Royal Commissioners who carried out the Exhibition, and they have given sites on it to numerous public buildings. Upon the land are built large galleries for museums and pictures, and in addition to these are now built the South Kensington Museum, the Natural History Museum, the Government Schools of Science and Art, the Royal Albert Hall, the Royal College of Music, the Imperial Institute, the Alexandra Home for Female Students, the City and Guilds of London Institute, the School of Art Needlework, and other institutions.

When the Great Exhibition closed, the Government offered me a Knighthood or the Companionship of the Bath. I selected the latter. The French Government also offered to make me Officer of the Legion of Honour, but this honour I at that time declined, as I was in the employment of the English Government.

The Prince Consort wrote the following letter :—

The Prince Consort to Playfair.

WINDSOR CASTLE.
October 15th, 1851.

MY DEAR DR PLAYFAIR,—I had meant on this day to present you with a gold medal as a remembrance of our labours for the Exhibition which has this day been so happily closed, but the medallist has disappointed me. I have accordingly to do what you had to advise the Commission to do with their prize medals—viz., to announce that it will be forthcoming.

Colonel Reid has, upon his appointment to the governorship of Malta, resigned the office of Gentleman Usher which he held in my household. It would be very pleasing to me if by your accepting the office my personal

contact with many politicians of eminence, including Lord Granville. His correspondence with Lord Granville was in 1850 voluminous. There was hardly a point connected with the constitution of the juries, the preparation of their reports, and the manner in which their services were to be recognised, that was not submitted by Lord Granville to Playfair. But even more intimate and more constant was the correspondence that was carried on between Playfair and the Prince Consort. As he tells us in his Reminiscences, part of his work in preparing for the Exhibition was to visit the English manufacturing towns in order to remove the misapprehension which prevailed as to the purpose and scope of an enterprise which was at that time wholly novel.

Colonel Grey to Playfair. OSBORNE, *May 24th*, 1850.

MY DEAR SIR,—I yesterday received your letter, and you could understand on your return to London that the removal of the Court was the cause of my delay in answering it.

His Royal Highness completely concurs in all you say —both as to the necessity of your completing your visits to the principal English manufacturing towns, where the greatest misapprehension exists as to the views of the Royal Commission, previous to your going to Ireland; and also as to the propriety of having Colonel Lloyd with you for a week or two, before he is charged with any separate mission.

H.R.H. has been much gratified by your reports from Leeds and Birmingham to myself and Lord Granville, and desires me to congratulate you on the eminent success which appears to have attended your visits to so many important towns.

We shall be here till the 18th of June, and I shall hope to hear from you from time to time of your further progress. Believe me,

Yours very truly,

C. GREY.

Of the substantial character of Playfair's share in moulding the machinery of the Exhibition, the following correspondence furnishes proof.

Playfair to Colonel Grey.

1, PALACE YARD,
May 28th, 1850.

DEAR SIR,—Before leaving for Liverpool, I am anxious to call your attention to the most important and delicate subject still unresolved in connection with the Exhibition of 1851. I allude to the constitution of a central Jury of Appeal and Award. I think we must determine that this jury shall have both these important duties to perform. The feeling of the country is so decidedly in favour of the representative system that it is expedient to start with this principle. The Exhibition being of so vast and varied extent, it is absolutely necessary to have juries of very special qualifications. To procure these, I would suggest the following system for the consideration of His Royal Highness, not as being the best which could be devised, but as being that which would best chime in with popular feeling.

The Commission to issue a letter addressed to all Local Committees, both in England and in foreign countries, requesting them to transmit to the Commission the names of those whom they would select as being adequate representatives of the *special trades* carried on in their several localities. This nominal list would then be classified into a subject-list. Thus all those skilled in silk would be brought together: those skilled in brass-founding, etc. etc. This being done, the Commission is to select six or more names from this list to act as a Special Jury on the particular class of manufacture. Thus in *silk* the names would comprise the sub-divisions of that trade—as those skilled in silk dresses, silk fringes, silk velvets, etc., the towns having recommended representatives of their *peculiar* manufacture.

Classifying the trades, about thirty Special Juries would thus have to be created. Fewer would scarcely do without speciality being sacrificed. But as 180 men could not

act together, and acting separately could not preserve uniformity of action, or procure sufficient respect for their decisions, it is necessary to devise a plan to obviate these difficulties. The plan I would propose is this:—Each Special Jury is to elect a Chairman. The Chairmen of the Special Juries are to associate themselves with representatives or nominees of the Royal Commission, and this joint body forms a *General Council.* All decisions of Special Juries are to be submitted to and ratified by this Council before being considered final. In fact the Special Juries represent *skill*—the General Council, *common sense.*

This General Council would not exceed 35 in number. . . . Such a Council would command the respect of the public, and confidence in its decisions would follow. I need not point to the numerous advantages which would arise from our securing the goodwill of the public in the matter of Juries of Appeal and Award. I submit this plan with all possible deference. It is the best I have been able to think of in endeavouring to unite the popular and aristocratic elements, which I think are essential. But I am by no means confident that it is the best system which could be devised. It is by far the most difficult question we have had to deal with, and I am sure His Royal Highness will excuse the liberty I have taken in venturing to draw his attention to so important a subject.

Dear Sir,

I have the honour to be

Your obedient Servant,

LYON PLAYFAIR.

Colonel Grey to Playfair. OSBORNE, *May 29th*, 1850.

MY DEAR SIR,—I have this morning received your letter, and have lost no time in submitting it to the Prince.

His Royal Highness thinks your plan will be an admirable one for constituting a Central Jury of Appeal for this country. But there are strong reasons against

giving to the same body the duties both of a Jury of Appeal and of Award.

In the first place a Jury of Appeal is not required for foreign countries. The Commissions, or other central authorities, appointed by foreign Governments will take upon themselves the responsibility which at home would attach to a Jury of Appeal, of selecting, according to the space allotted to them, the articles to be exhibited by their respective countries. Such a jury, however, is required with us to exercise the control over our Home Contributors which the Commissions appointed by foreign Governments exercise abroad. And the plan you suggest for its constitution seems very good.

When this jury has executed the duty entrusted to it of controlling and selecting the contributions from home, we shall then be in the same position as foreign countries, where a similar control and selection will already have been exercised under the authority of their respective Governments.

And then will come the consideration of the best mode of constituting the Juries of *Award*.

This is a very important point. It is not only necessary to ensure a fair and impartial decision as far as practicable, but it is also necessary that your fairness and impartiality should be evident to the world. The Juries of Appeal, constituted as you propose, will probably form as good a basis as can be devised from which to select your Juries of Award. But to give to other countries perfect confidence in your impartiality, it will be requisite that a certain proportion of their numbers should be foreigners. If you refer to former minutes you will find that such a promise has in fact been given, and that an announcement has also been made that no person should be placed upon such a jury who was himself an exhibitor.

On these, and other points connected with this subject, H.R.H. would be glad to have an opportunity of talking fully with you before any decision is come to. Perhaps after your return from Liverpool you might be able to run down here; and I shall be glad if you will tell me, with

the view of fixing some day for your doing so, and also of arranging that Lord Granville should meet you here, what your present arrangements may be.

Believe me,

Yours very truly,

C. GREY.

It was when the success of the Exhibition had been assured and it was drawing to a close, that the most serious of the questions connected with it forced themselves upon the consideration of the Prince Consort and his advisers. The Exhibition had resulted, as we have seen, in a very large pecuniary profit, amounting in round figures to two hundred thousand pounds. How to dispose of this surplus was the problem that occupied the attention of the Prince Consort and his little band of assistants. That it should be devoted to educational work for the benefit of the public was the fixed determination of the Prince. But many schemes passed in succession through his mind, and many were suggested to him by his advisers, before a solution of a most difficult and delicate problem could be arrived at. Upon one point there seems to have been from the first a pretty general agreement. This was that the surplus fund, instead of being sunk in Consols, should be invested in land. The land, it was believed, if the site were properly selected, might be used for a double purpose. Part of it could be regarded as an investment, and employed for the development of a residential estate, whilst part could be reserved for the erection upon this estate of buildings devoted to the purposes which it had been the object of the promoters of the Great Exhibition to advance. It happened that at this time a most desirable piece of ground in the immediate neighbourhood of the spot on which the Exhibition Buildings stood, was for sale. This was the extensive tract of land lying south of Hyde

Park and Kensington Gardens, now familiar to everybody as South Kensington. The site attracted the favourable notice of the Prince Consort, and it commended itself to Playfair's practical judgment. Early in the month of August, 1851, the Prince stated his first rough ideas on the subject of the disposal of the surplus in the following memorandum :—

I would buy that land, and place on it an Institution embracing the four great sections of the Exhibition, *i.e.* raw materials, machinery, manufactures, and plastic art. This Institution I would devote to the furtherance of the industrial pursuits of all nations. If I examine what are the means by which improvement and progress can be obtained in any branches of human knowledge, I find them to consist of four.

First : Personal study from books.

Second : Oral communication of knowledge by those who possess it to those who wish to acquire it.

Third : Acquisition of knowledge by *ocular observation*, comparison, and demonstration.

Fourth : Exchange of ideas by *personal discussion.*

Hence I would provide there in special reference to the wants of each of the four great sections :—

(1) A library and rooms for study ;
(2) Lecture rooms ;
(3) A convenient area covered by glass for the purposes of the Exhibition ;
(4) Rooms for conversazioni, discussions, and industrial meetings.

The surplus space might be laid out as gardens for public enjoyment and instruction, and be so arranged as to admit of the future erection of public monuments according to a well-arranged plan.

As this scheme is founded upon the presumed necessity of affording instruction to those engaged in the prosecution of arts and manufactures, it may be desirable that the necessity for this should be shown to be real. The

many important discoveries of modern times have tended to the cheapening and to the ready acquisition of the raw materials on which manufacturers depend. The improvements in locomotion, the increased means offered by science for the extraction, preparation, or culture of the raw material, have lessened the peculiar local advantages of certain nations, and thus have depressed the relative value of the raw material as an element in manufacture; while they have immensely increased the value of skill and intelligence as the other great element of production. The nations most likely to afford a public recognition of this fact are those whose fuel and raw materials are chiefly derived from other lands, and who can therefore only carry on a successful competition by continually economising and perfecting production by the applications of science. It is accordingly in those countries, as in France and Germany, that we find entire systems of education devoted to those who are charged with industrial pursuits. In France this want has been so strongly felt that, in the midst of free Government Institutions liberally endowed, industry has raised for itself a self-supporting College, L'École Centrale des Arts et Manufactures, which sends annually three hundred highly educated men to impart this science and intelligence to the manufacturers of France. So much is the practical value of this special technical education appreciated by manufacturers, that the certificated pupils of this school are in great demand, not only in France, but in Belgium, and latterly are found in the management of some of our large manufactories in England.

But as in England the progress of science is daily equalising more the distribution of raw materials, and depriving us of those local advantages upon which we may have been too much accustomed to depend, it is an obviously growing necessity that it should afford to its manufacturers the means of acquiring that knowledge without which they cannot long keep foremost in the struggle with nations. But it must not be forgotten that the funds with which the new Institution is to be founded are the contribution of all nations, and the establishment of an

educational institution must not be merely national, but its advantages must be open to men of all nations.

It is obviously unnecessary in a preliminary proposal to define those branches of knowledge which such an Institution should embrace, but I would propose to confine it to education of a technical and practical character, and thus be supplementary to, and not a substitute for, the other educational institutions of this country. I would in all cases bear in mind its international character, and, with this view, would bring into close connection with it those societies for the promotion of science, abstract and applied, which in their very nature are cosmopolitan. I find that in England the separate pursuits of industry are represented by a variety of public societies struggling for existence, unconnected with each other, and either unprovided with suitable locations or exhausting in providing them those funds which should be applied to the promotion of their respective objects. Could not such societies—or most of them—containing as they do all that this country possesses of talent and experience in their branches, be united in this Institution, reserving to each its individuality and self-supporting and self-maintaining character, but bringing them together under a general roof, and so far asking them to extend their *popular* influence as to place them in a relation of reciprocal influence with public opinion? The centralisation of these societies is a want much felt even by many of themselves, and still more by the public, but can only be effected by showing that the facilities offered by this Institution would tend to their own advantage, and certainly to the promotion of those objects for which they are established. As it might be convenient in matters affecting their common interest to have a council consisting of their respective chairmen, such a body might be entrusted with the duty of collecting for the civilised world that general and statistical information, and a collection of the materials from which alone those general laws can be abstracted, guided by which we can hope safely to progress in all branches of civilisation.

This document calls for no apology on the part of those who hold that the Prince Consort was a great and original labourer in the field of education. I embody it here, however, not merely because of its striking merits, but because it was the germ out of which sprang those great institutions with which Playfair throughout the remainder of his life was so closely connected. The scheme drafted by the Prince Consort, despite its undoubted merits, had obvious defects. Its very catholicity told against it. Whilst everyone was prepared to admit that science is cosmopolitan, there were many who declared that this country was entitled to derive special benefit from the success of an exhibition which had been carried out, not only on English soil, but by the labours of English statesmen and men of action. Long and weary months were spent in discussing the manner in which the Prince's good intentions could be carried into practical effect. A few of the letters of this period will show Playfair's part in the discussion of a most momentous question.

Playfair to Sir Henry de la Beche. *August 20th*, 1851.

(*Confidential.*)

DEAR SIR HENRY,—At my urgent solicitation at Osborne on Monday, the Prince has consented to postpone the publication and development of the scheme. It was not sufficiently matured for public adoption, and overlapped our own as well as other institutions, and would have committed him to a course which, opposing other institutions, would have been much criticised. . . . The plan I shadowed out was this:—The schools of design throughout the country might be made centres of education, to which other branches were to be attached. These were to be united with a University of Mines and Manufactures, in London, empowered to grant degrees and diplomas; and our museum, as representing mines and metallic manufactures, was to be considered one great

central college; and the new central college, principally for the textile manufactures, might be considered the other great central institution. That they were not to be in any way allied more than going before the same Board of Examiners for diplomas, and that in management and education they were to be as distinct as University College and King's College. I said it was obvious you could take no step now, but that when the scheme was really ripe for execution you might be disposed to enter into negotiations. He repeatedly asked me "what Sir Henry said," and so I will send your letter; but I think you should not do more than appear a friendly watcher now, for the ideas are still practically crude, and must be much modified to take with the public; though, as they are certainly founded on truth, they will certainly be the ultimate ones adopted, and they are not very far from being practical.

Sir Charles Phipps to Playfair.

BALMORAL,
September 27th, 1851.

MY DEAR DR PLAYFAIR,—I beg to acknowledge the receipt of your letter of the 26th, which I have submitted to His Royal Highness the Prince. H.R.H. thinks that there would be no harm in endeavouring to ascertain the disposition of the leading members of the learned societies to some system of combined action and centralisation. But it should be carefully provided that neither their assent should be considered in any way to bind to the adoption of any particular plan, nor the objections entertained by any of these bodies to present any bar to the carrying out of any project independent of them.

The longer the Prince considers and weighs the subject of the disposal of the surplus, the more convinced he becomes that no arrangement for its appropriation can be satisfactory that does not include the interests of all the world. The original agreement with the public, which must be adhered to, was that the surplus, if any, should be expended upon objects strictly in unison with the intentions and objects of the Exhibition. The distinguishing

feature of this Exhibition over all others was that *it was for all nations;* and both in maintenance of this principle, and for the ultimate benefit of this country, this great distinction ought to be scrupulously adhered to.

All plans that have in view the application of the surplus to introducing a system of founding an establishment which already exists in some other countries and not in this, for the benefit of England, are national and not cosmopolitan plans; and so far diverge from and fall short of the great intention of the Exhibition.

The surplus has, in fact, been collected from all nations, and justly and honestly claims a proprietary not less extended. In projecting, therefore, modes for the disposal of the surplus, the object must not be so much the founding of institutions through which Great Britain may be raised to an equality, or maintain her superiority over other nations, as the foundation of some establishment in which, by the application of science and art to industrial pursuits, the industry of all nations may be raised in the scale of human employment; and where, by the constant interchange of ideas, experience, and its results, each nation may gain and contribute something. There is no doubt that in such an interchange England would ultimately be the greater gainer. She would have the advantage of the use and the results of the acquired science, and would indeed become the headquarters of the skilled industry of the world.

Sincerely yours,

C. B. PHIPPS.

Playfair was in the very heart of the negotiations relating to the development of the Prince Consort's scheme, and once more he gave evidence of his capacity as a mediator between conflicting sections. But he had other work to do besides that of helping to bring about an agreement at headquarters. Part of the business to which he devoted himself was the creation of public interest in the budding schemes of the Exhibition Commissioners. He was full of enthusiasm, and it was not unnatural that he

should under-estimate the difficulties of the task which lay before him in moving an inert public opinion in favour of a grand scheme of practical education. The delicate, diplomatic tact which served him so well when he was dealing with individuals was not so useful when he was brought into contact with masses of the people. He had not yet acquired the experience which afterwards enabled him to deal as successfully with bodies of the public at large as with individual men and women; and in his zeal he sometimes ran into difficulties, as he did towards the close of 1851, when his advocacy of a scheme of practical instruction was resented by some friends of education because of its omission of all reference to religious education.

Colonel Grey to Playfair.

WINDSOR CASTLE,
November 18th, 1851.

(*Private.*)

MY DEAR DR PLAYFAIR,—I have submitted your letter of this morning to the Prince, and will take an opportunity of calling his attention to the report and the proceedings of the meeting of the Sunderland Local Committee, which you enclose. You know the interest His Royal Highness takes in this question, and that he is as anxious as you can be that the present movement in favour of the extension of science to productive industry should not be allowed to fall dead. But the mode of best effecting this object requires most careful consideration.

What has just happened to you shows the great danger to be apprehended if any suspicion or alarm should arise in the mind of the *religious* world. Eager as the desire for instruction and knowledge may be, with all the increased force which that desire has acquired from the results of the Exhibition, I doubt whether it could enable you successfully to resist a cry of "*godless* instruction." Already you have been brought upon your knees; and the question is whether your repentance, however deep and sincere, will avail you. The note of alarm has been

sounded, and you will now have to be doubly on your guard in any scheme which you may propose which avowedly involves "National Education." To do any good, you must carefully shun the *vexata quæstio* of "*by whom*" such education is to be conducted. Once get into that troubled sea, and you are swallowed up in the vortex of contending parties. On this question the ground is already occupied. Everyone (some in one sense, some in another, but all equally doggedly) has made up his mind, and is wedded to the particular system by which alone he thinks any good can be effected. Look at the fate of all attempts up to this time—of all measures introduced into Parliament that have connection with this subject. Look to your own late experience, and consider the danger, if an "educational" system is inconsiderately urged forward, of provoking an opposition which may be carried successfully beyond the particular system against which it was first directed, to any system which has for its object to extend the application of science and industry. I like Mr Moodey's speech much, and what he says seems to me to tally with the practical course which, as I understand it, the Prince advocates. "Carry out," he says, "the objects of their Mechanics' Institute with greater force. They had already a museum, a sort of raree show, which had yet served no practical purpose; connect it with the proposed Institution, furnish it with suitable specimens of our four staples, get scientific gentlemen to attend, say from seven to nine in the evenings, not to give finely-framed lectures, but to take out specimens and explain them so that the hearers may thoroughly understand and never forget them." However, my object was not to enter upon what ought to be done, but to point out by His Royal Highness's desire the danger of alarming the religious world by any avowed educational scheme which might stir up a storm in which both his plan and yours would be equally wrecked.

Believe me,

Yours very truly,

C. GREY.

It is not merely for its bearing upon the threatened theological opposition to technical education that I have quoted the foregoing letter. In the few words of practical advice with which it ends may be found the germ of one section of the great scheme eventually adopted by the Commissioners of the 1851 Exhibition—the establishment in local centres of branch schools of technical and practical training.

The work of preparing the Report of the 1851 Commissioners fell largely to Playfair, and during its progress he was in constant communication not only with the Commissioners of the Exhibition but with the Prince Consort.

Colonel Grey to Playfair. *March 22nd*, 1852.

I hear from the Executive Committee that the Report and Appendices are all about ready, with the exception of the Jury Reports. I write a line by desire of His Royal Highness Prince Albert to remind you that the month of March is nearly over; and that he will be much disappointed if anything should occur to delay the appearance of the Report by the 1st of May.

Yours truly,

C. GREY.

Same to the same. KENSINGTON PALACE, *May 19th*, 1852.

DEAR DR PLAYFAIR,—Your draft winding-up, I am afraid, will not do. In the first place, His Royal Highness thinks it too long, and that where it merely repeats what has been already said, it should be *much* shorter. A simple *résumé*, in fact, of the various points which have been already treated of—little more, indeed, than the Prince's memorandum, which gave the heads from which Baring compiled the Report. Where you get to new matter, you go too quick, and enter into a detail with your scholarships, etc., that is quite premature; and the Prince thinks therefore it will be better to reconsider this part of the Report.

There are many other letters of similar purport, showing how close was the attention which the Prince bestowed upon the details of the great scheme, and how anxious he was to secure for it a favourable reception from the public. When at last it appeared, the Press received it coldly, and it was openly attacked in some quarters. Yet out of it grew, as has already been pointed out, the greatest of all educational movements which this century has witnessed in England. It is time that I should briefly indicate the character of the scheme that was finally adopted by the Commissioners—a scheme which both in its conception and development received the most active assistance from Lyon Playfair.

The actual surplus from the Exhibition of 1851, after allowing for all expenses, including the presentation of medals to the numerous jurors, was £186,436. Large as this amount was, it was soon found to be insufficient for the purpose of carrying out the plan which had been finally adopted by the Prince Consort and his confidential advisers. Application was made to Parliament, and a grant of £150,000 was made by the House of Commons. With this sum, two estates and a portion of a third in South Kensington were purchased. The Gore House estate consisted of twenty-one acres, and extended from the Kensington Road about a quarter way down the present Exhibition Road. The Villiers estate of forty-eight acres comprised the land upon which the greater part of Queen's Gate has since been erected, as well as the site of Cromwell Road, the existing Natural History Museum and the Science Museums. The Harrington estate, seventeen acres of which were purchased, included the site of the Art Museum which now faces the Brompton Road. At the time when the purchase was made, these valuable properties consisted of little more than fields intersected by narrow lanes. A few houses—one or two of consider-

able pretensions, but many little more than farmhouses or cottages—were scattered over the ground. In the year 1851, partridges were shot on the ground where the Natural History Museum now stands. But the keen business eyes of those who were advising the Prince Consort in this matter had detected the possibilities of the estate which was formed by the purchase; and the consent of Parliament had been secured for this portion of the scheme. The desire of the Prince was that the great existing institutions of London, including the National Gallery and Royal Academy, should be brought together on the site which was now for the first time formally denominated "South Kensington." Around these institutions were to be raised a new Museum of Art, and another devoted to Science. Such was in brief the original proposal of the Prince and the Commissioners. It was carried out only in part. The removal of the National Gallery from Trafalgar Square to South Kensington was successfully resisted; but where it was first proposed to place the National Gallery, the Natural History Museum has since been erected; whilst all who know the South Kensington of to-day are aware of the number of important public institutions which have been established upon the site secured by the Exhibition Commissioners. Yet it may be said with truth that the housing of these specific institutions on the South Kensington site has been the least important part of the work accomplished by the Commissioners of 1851. The central feature of the Prince's scheme was the establishment of a practical institution for the application of science and art to productive industry. This was the beginning of the two great institutions, one long known to the world as the South Kensington, and now as the Victoria and Albert Museum, and the other as the Royal College of Science.

In March, 1853, the Science and Art Department was

formed. Under it was combined the existing School of Design with the schools established in local centres in different towns of the United Kingdom, the Museum of Practical Geology, and its associated Schools of Mines. The Museum of Irish Industry and the Royal Dublin Society, both of which were supported by Parliamentary grants, were associated with the new Department, whilst provision was made for the establishment of a School or College of the highest class in Science and Art for the instruction of students and the education of teachers for the local institutions throughout the country. In the first sketch of the scheme, Mr Cole, who already filled the office of Superintendent in the Department of Practical Art, was made Secretary of the Art Department, whilst Playfair received a similar appointment in the Department of Science, his salary being £1,000 a year, and an allowance of £350 for travelling expenses. It was very soon found, however, that this arrangement was not a good one, as there was no provision for the joint working of the two Departments. Accordingly, Mr Cole, in 1855, was appointed Inspector-General, and Playfair Secretary, of the united Departments, no alteration being made in their respective emoluments. The Science and Art Department, having been formally created, was taken out of the control of the Board of Trade, which had previously been the governing authority of the School of Mines, and transferred to the charge of the Education Department of the Privy Council.

The first building operations began towards the close of 1856, when an edifice of corrugated iron, long familiarly known to the people of London as "the Brompton boilers," was erected on that part of the site which lay to the east of Exhibition Road. Here the first museum of industrial art which had been formed in England was temporarily housed. The origin of the

museum was a grant which had been made by the Treasury in 1851 for the purchase of exhibits from the Great Exhibition that had practical value as specimens of Art and Manufacture. The amount of this grant was £5,000, and from this grain of mustard seed has grown the splendid collection which is now housed in many galleries and buildings in South Kensington, and which before long is to have a stately home on the historic site.

The organisation of the Royal College of Science naturally fell heavily upon Playfair's shoulders. A great national institution had to be founded, and the task was not a light one. It was not without many a struggle and many a feud that the Science and Art Department at last took shape. It would never have been brought into existence if it had not been for the enlightened and elevated public spirit of the Prince Consort—a man to whom England owes more than it does to any other human being for the development of scientific training. It is not less certain that in the initial stages of the work Playfair's enthusiasm and wonderful capacity for labour were of invaluable service. If to Sir Henry Cole belongs the credit of having placed the Art Department upon the lines on which it was subsequently developed, to Playfair no less belongs the honour of having given form and substance to that part of the scheme which was specially related to the establishment of a national system of scientific instruction. Under the Prince Consort, he may be said to have been the father of the Science Department; and it was his happy lot not only to continue his connection with it for more than forty years, but at a date long subsequent to that of its foundation to rescue it from a state of financial depression into which it had been allowed to fall by those immediately responsible for its management, and thus to save it from a crisis which well-

nigh threatened its very existence. This part of the story belongs, however, to a later period in Playfair's life. For the present I have merely sought to set forth those facts which throw light upon his close association with the beginnings of the new Department, and upon the nature of the labours which he had to undergo in connection with its foundation.

It was whilst he was busily engaged in the preliminary labours of the Exhibition Commissioners that he received a compliment which he valued highly. This was his election by the committee of the Athenæum Club as a member of that institution. A characteristic story is told in connection with this election. The rule requires that the committee shall be unanimous in its choice of the member upon whom it confers the honour of special election. Playfair heard that there was one member of the committee, and one only, who had expressed some feeling of hostility to him. He wrote to this gentleman, and, telling him that he knew he was to be nominated for election, asked him to do him the honour of being his proposer. The election, it need scarcely be said, was unanimous.

CHAPTER VII.

EDUCATIONAL REFORM.

Attending the Royal Children at the Exhibition—Arranging for the Prince Consort's Visit to Birmingham. AUTOBIOGRAPHY: Lecturing for the Society of Arts: Inquiring into Technical Education on the Continent: Organising the "Food Collection" for the South Kensington Museum: Establishing a National Museum in Edinburgh: Dr George Wilson and his Dying Epigram: Crusading in the Cause of Technical Education: The Duke of Wellington's Funeral: Sir Charles Wheatstone: Reading Ciphers in 'The Times': Acquaintance with Babbage: Lord and Lady Ashburton: Mrs Norton: Lord Granville: Lord Palmerston and the Cipher: Inventing Shells: Lord Dundonald's Scheme for Reducing Fortresses: Appointed a Commissioner of the International Exhibition of 1855: Acquaintance with French *Savants*: Missing the Mastership of the Mint: Second Marriage. Faraday on the New Lucifer Matches—Playfair's Contempt for Misplaced Humanitarianism in War—Liebig on Scientific Agriculture.

I MUST anticipate Playfair's own account of his life between 1851 and 1858, in order to touch upon some incidents that ought not to be omitted from his biography. The reader has seen from letters published in the last chapter how close had become the connection between Playfair and the Prince Consort. His appointment as Gentleman Usher to His Royal Highness gave him free access to the Prince. The office was little more than a nominal one, and if it had not been for the fact that the Prince found in Playfair a congenial colleague and assistant in the development of his cherished educational schemes, it is probable that they would not have seen much of each other. As it was, Playfair's advice and assistance were constantly sought upon all matters that bore in any way

upon the scientific and educational subjects in which the Prince took so deep an interest. During the time when the Exhibition of 1851 still remained open, it had been Playfair's duty to attend the Royal children on their frequent visits to the Exhibition.

Colonel Grey to Playfair. WINDSOR CASTLE, *October 19th*, 1851.

DEAR DR PLAYFAIR,—The Royal children are anxious to present you with their portraits as a slight expression of their sense of the attention they met from you during their visits to the Exhibition. The Prince desires me therefore, in their name, to send you the accompanying prints in remembrance of those visits.

Believe me,

Yours very truly,

C. GREY.

There were many matters connected with the development of the system of scientific education which engaged Playfair's close attention during the years that followed the inception of the South Kensington scheme.

Colonel Grey to Playfair. WINDSOR CASTLE, *January 5th*, 1853.

MY DEAR PLAYFAIR,—I have written to Lord Granville to know if he can be here on Saturday next at five o'clock. Perhaps you would communicate with him, and find out if he can come, and in that case, the Prince would be glad if you could come too, that you might talk over the proposed School of Practical Science. Your letter from Sheffield was very satisfactory, but I had a letter from Owen the same day from the neighbourhood of Wolverhampton, giving a very different account of the disposition of the ironmasters. I had a long and interesting letter from Bowring[1] to-day, who begins to be anxious for

[1] Mr. E. A. Bowring had been appointed secretary to the Commissioners for the Exhibition of 1851

some positive step in advance. I am just as much so as he is, but I see the impossibility of doing anything till all the land difficulties are cleared away. I was in hopes that we should have heard from Cubitt ere this that he had brought Lord Harrington to terms.

One of the principal educational events of 1855 was the visit of Prince Albert to Birmingham for the purpose of taking part in the laying of the first stone of the Birmingham and Midland Institute. This was regarded at the time as one of the most striking results of the new movement for scientific training. The address of Prince Albert at the luncheon after the ceremony has been quoted in recent years[1] as "the charter of the new system of teaching." Some idea of the labour laid upon those who had charge of the arrangements for the Prince's visit to Birmingham, and of the extent of Playfair's duties in connection with the Prince's household, may be gathered from the following letters :—

Colonel Grey to Playfair.

WINDSOR CASTLE, *November 19th* 1855.

MY DEAR PLAYFAIR,—I have just talked the programme over with the Prince. It might possibly be expected that he would give the toast of the Midland Institute, etc., the proposer of which I see is left blank; but His Royal Highness means to say all he wishes to say on the subject in returning thanks for his own health, and as there is a great deal of singing put down to follow each toast, which would make it a long business, he thinks it will be better that he should leave as soon as the toast of "The Army and Navy" has been drunk. This will be none too soon to enable him to get back to Windsor in good time. He would be much obliged to you if you would go, as you propose, to Birmingham the night before to see that all is

[1] By Sir Norman Lockyer.

perfectly arranged. The *chorale* after his own health he wishes not played or sung till after he has returned thanks, otherwise he says it would put him out. Pray take care of this. Also arrange that the different addresses shall be all presented on the railway platform—the Corporation Address being the only one read and answered. H.R.H. would prefer half-past twelve as the time for his arrival, otherwise he will hardly get to luncheon by two, and his return would be too long delayed.

I write in haste.

Ever yours truly,

C. GREY.

Same to the same. WINDSOR CASTLE, *November 26th*, 1855.

MY DEAR PLAYFAIR,—The Prince cannot but be gratified by the accounts sent him on all sides of the success of his speech. He is anxious that it should be correctly printed in the separate form, and would therefore wish that the proof might be sent to me for correction before it is struck off. There were one or two mistakes—in one instance a rather important one. Did I tell you that I got a message from M— wishing the Prince to wait for his speech ? (at least so I understood the message). Everything went off as well as possible, and the people of Birmingham would indeed have amply atoned for any offence, even if such had existed, but the Prince is quite at a loss to know what can have given rise to such a notion.

Ever yours,

C. GREY.

AUTOBIOGRAPHY CONTINUED.—VI.

1851 to 1858.

After the close of the Exhibition the Society of Arts organised a term of lectures for the purpose of drawing public attention to the lessons which should be drawn from the Exhibition. At that time England was in a very

backward state in regard to technical education both in science and art. My two lectures were devoted to this subject, and, at the time, they awakened considerable public interest. This was the beginning of the efforts to arouse public attention to the need of reforming our education so as to fit it for the increasing competition of the world. The improved methods of locomotion both by sea and land had altered the whole conditions of manufacturing industry. The possession of raw materials, such as coal and iron, had long given to a country like Great Britain a supremacy in manufactures, because economy of production was the most important condition for success. When science offered new and economical production through improved machinery, and when the demands of an increasing civilisation required the best forms of art to adorn the products, it became obvious that a nation which cultivated science and art must have a great advantage over a country which depended too exclusively on the more practical aptitudes of its people. Raw material had now become a decreasing factor in production, while intellect, trained in the application of science and art, became an ever-increasing factor.

I therefore determined to visit the leading countries of Europe in order to become acquainted with their system of education, especially in relation to their systems of technical instruction. Accordingly I went to France, Holland, Belgium, Germany, Austria and the Scandinavian States, everywhere meeting the most cordial reception from the Ministers of Education and other authorities. The Great Exhibition had brought me into contact with the leading manufacturers of these countries, so that my educational tour, though in no sense official, met with the same facilities as if it had been a Government inquiry.

On returning to London I gave the results of this tour in an introductory lecture to the School of Mines, under the title, "Industrial Instruction on the Continent." This lecture was attended by several of the members of the Government, and by some leading statesmen of both

political parties. It was afterwards published in the 'Records of the School of Mines.' It certainly gave a considerable impulse to technical education in England. Soon after this, in 1852, the Government determined to establish the "Department of Science and Art," and offered me the position of "Secretary for Science," and Sir Henry Cole that of "Secretary for Art."

The Prince Consort took a warm interest in this outcome of his Great Exhibition. In fact the organisation of the Department was largely owing to his advice, and was the result of many visits to Windsor Castle by Lord Granville, Cole and myself.

Many valuable objects had been presented to the Commissioners of the Great Exhibition with the view of founding a museum, and these became the nucleus of that wonderful collection which owes so much to Sir Henry Cole's energy, and is now known as the South Kensington Museum, probably the greatest museum of its kind in the world. In the presents referred to there were numerous specimens of raw materials, especially of grains and other alimentary substances. These were used to form "the Food Collection," which has been so much visited by the working classes. It is now at Bethnal Green. It would have been useless to display the analyses of various foods in statistical tables which no one would read, so I tried the experiment of showing the actual ingredients in a pound of food. Thus 1 lb. of maize was divided into so much flesh-forming materials, so much woody fibre, water, fat, sugar, gum, starch, etc., so that the eye could at once observe the quantities, while the results of the printed analysis could easily be copied if the visitor desired to do so.

This system of instructional display is now followed in every museum, but at that time it was novel. When a working man was told that 100 lb. of potatoes contained only 2 lb. of flesh-formers, while the same quantity of beans contained upwards of twenty pounds, he scarcely grasped the difference. But when in the same show-case he saw the small amount of flesh-

formers in a pound of potatoes sprinkled over the bottom of a box, and the large amount heaped up in a corresponding box for beans, peas, or lentils, he learned a practical lesson through the eye and never forgot it. The temperance societies took up this subject warmly. Thus, when we showed how much water and spirits were in a gallon of alcoholic drinks, and how insignificant were the nutritive materials even in beer, the cause of temperance received more support than from any number of lectures. Ultimately this food museum led to a demand for schools of cookery, which have proved beneficial to the working classes. This collection of food was, however, a mere appendage to the South Kensington Museum, which was intended for art, and not for science. The Science Museums in connection with the Department were not at South Kensington. The Museum of Practical Geology was in Jermyn Street, and a Museum of Industry, under Sir Robert Kane, was in Dublin.

At this time there was no national museum in Edinburgh. I went down to that city and negotiated with the University and the Town Council for establishing a museum in the metropolis of the north. The municipality offered free land for building, and the University agreed to hand over its splendid collections of natural history. On reporting to Government the result of these negotiations, an application was made to Parliament, which voted the necessary sums for building and supporting a national museum in Edinburgh.

In 1855, my old friend and fellow-student, Dr. George Wilson, was appointed curator of this museum. Let me say a few words about this remarkable man, who is now best known to the world by his 'Life of Cavendish,' and by his charming book, 'The Five Gateways of Knowledge.' He was always in delicate health, so much so that no insurance office would accept the risk of his life. In spite of this he was an indefatigable worker, and was so much beloved that contributions to the new museum were freely given from all parts of the kingdom. To him is largely due the increase and popularity of the Edinburgh Museum.

George Wilson never had an enemy. His mind was cultivated, a vein of humour like that of Edward Forbes running through all his work. Some years later (November, 1859), when I was Professor of Chemistry in the University of Edinburgh, George Wilson died, and the city gave him a public funeral. In his last illness he was attended by two medical colleagues, Professor Bennet and Dr Laycock, who as usual took opposite opinions as to the nature of his malady. George Wilson was amused at this professional dispute, and asked for paper in order to write his own epitaph, which ran as follows :—

> "Here lies George Wilson o'ertaken by Nemesis;
> He died of Hæmoptysis not of Hematemesis."

George Wilson was one of the legitimate successors in literary faculty to Scott, Jeffrey, and Wilson of 'Blackwood's Magazine,' though his scientific tastes led him aside from pure literature.

The art section of the new Government department progressed more rapidly than that of science. Already there were various "schools of design" in London and the provinces, so these could readily be adapted to schools of art. But there was then not a single school or college of science except Owens College in Manchester and the Andersonian College at Glasgow.

Having great faith in the education of public opinion, I began a crusade in favour of technical education. It was weary and dreary work. My voice sounded to myself as the voice of one preaching in the wilderness. At first there was no response, except a few schools of navigation in the seaports. But I hope and believe that these efforts were not thrown away. Now there is scarcely a large town in Great Britain that has not a college of science; and my successor in the department, Colonel Donnelly, has been able, under the improved public demand, to organise an extensive scheme of scientific education for the working classes. Several of these colleges of science have asked me to open them to the public, in recognition of my earlier labours to educate public opinion.

It may be instructive to point out how slowly and yet how surely public opinion responds to a movement in favour of reform if that be founded on public needs. In 1851 I lectured to the Society of Arts in favour of changes in our educational system adapted to the practical needs of the country. In 1852 the Department of Science and Art was formed. On the 15th May, 1867, I issued a new warning to the country in a letter addressed to Lord Taunton, the Chairman of the Public Schools Inquiry Commission. In this letter occurs the following passage: "That as an inevitable result of the attention given to technical education abroad and of its neglect in England, other nations must advance in industry at a greater rate than our own country; . . . this result has already arrived for some of our staple industries." The Public Schools Inquiry Commission circulated this letter to the leading manufacturers and men of science, and a Parliamentary report was published of communications sent to the Commission. In the same year a public meeting, presided over by Lord Granville, was held at the Society of Arts to promote technical education, the first resolution being proposed by me and seconded by Lord John Russell, afterwards Earl Russell.

In 1887 another public meeting was held at the same place, presided over by Lord Hartington, at which I again proposed the first resolution, which was seconded by the Right Hon. John Morley. I now feel that this work may be left to younger men, but I hope they will not take their hands from the plough till England has adapted its system of education to the changed conditions of competition.

In September, 1852, the great Duke of Wellington died, and I was present at the State funeral in attendance on the Prince Consort. The 18th of November, 1852, was a day of mourning throughout the United Kingdom. The Department of Science and Art had been instructed to prepare designs and to secure the construction of a State funeral car. It was made of bronze, and was quickly executed by Messrs Tyler. But, though a beautiful work

of art, it was altogether a mistake. It would have better suited the great military hero had his coffin been placed on a gun-carriage instead of on this ponderous car. Its great weight interfered with the progress of the procession, for it broke down a sewer in St. James's Park, and by this accident the royal procession was delayed for one or two hours. A million and a half of people had lined the streets from Buckingham Palace to St. Paul's Cathedral as early as seven o'clock in the morning, and though the procession began to move at that hour the royal carriages only reached St. Paul's about two o'clock. The million and a half spectators really mourned the death of the illustrious hero; they were not gathered together merely to see the stately pageant of a great military funeral. Outside as well as inside the cathedral the pomp and glitter of military and civil uniforms was as nothing to the mourning of a whole people. When at three o'clock the coffin was lowered to its last resting place amidst the mournful dirge of the choir, there were few dry eyes in that great assembly of mourners. I have only once been so deeply moved at a public funeral ceremony, and that was in 1861, when I had to join in the obsequies of the Prince Consort.

My house at this time was on the Surrey side of Hammersmith Bridge, and on the other side lived my friend Sir Charles Wheatstone. He, as is well known, was the chief inventor of the electric telegraph. Sir Charles was a man of remarkable inventive faculty, and at the same time a scientific discoverer as well as an inventor. Sir Charles Wheatstone, though older, was, like myself, small of stature, and we both wore spectacles. We were constantly mistaken for each other, and we must have been alike, for once Lady Wheatstone addressed me as her husband. On Sundays we generally walked together, and used to amuse ourselves by deciphering the cipher advertisements in 'The Times.' An Oxford student who was in a reading party at Perth was so sure of his cipher that he kept up a correspondence with a young lady in London. This we had no difficulty in reading. At last

he proposed an elopement. Wheatstone inserted as an advertisement in 'The Times' a remonstrance to the lady in the same cipher, and the last letter was, "Dear Charlie, write no more, our cipher is discovered!" One cipher appeared each month in 'The Times,' but it was so short that it was difficult to read. At last we made it out to be, "'The Times' is the Jeffreys of the Press." Anyone acquainted with cipher will see that the key to this short advertisement was the frequent repetition of the letter "e" and of the word "the." On telling Delane, the editor of 'The Times,' that his paper was publishing its own condemnation as the wicked judge, he was angry instead of being amused at the trick played.

In speaking of Wheatstone I may mention my presence at a curious concert given to the Queen and Prince Consort at the Polytechnic Institution on the 10th of May, 1855. This is often quoted as proving that Wheatstone invented the telephone, although it had nothing in common with this invention. Wheatstone had helped Professor Pepper to arrange rods of wood passing from the cellars of the Institution to a small lecture room on the upper floor. Each of these rods was connected with a separate musical instrument played in the cellar, while the music, being conducted to the room above, reproduced itself on the sounding boards of three harps. It had a curious effect to hear tunes played in a room without the appearance of performers.

Another philosopher whom I frequently visited was Babbage, the inventor of the calculating machine. He was in chronic war with the Government because it refused to furnish supplies for his new machine, the ground of refusal being that he never completed the first. Babbage was a man full of information, which he gave in an attractive way. I once went to breakfast with him at nine o'clock. He explained to me the working of his calculating machine, and afterwards his methods of signalling by coloured lamps. As I was engaged to lunch at one o'clock, I looked at my watch, which indicated the hour of four. This appeared obviously impossible,

so I went into the hall to look for the correct time, and to my astonishment that also gave the hour as four. The philosopher had in fact been so fascinating in his descriptions and conversation that neither he nor I had noticed the lapse of time.

Babbage always considered himself a badly treated man, and this feeling at last produced an egotism which restricted the numbers of his friends. The following anecdote is a curious instance of this :—Having been at Osborne, I accompanied the Prince Consort to London. During the journey I strongly urged the desirability of the Crown bestowing honours on men of science. I pointed out that while the Army, Navy, and Civil Service received titles and decorations in profusion, the Crown bestowed few on men of learning. The consequence was that they ceased to look on the Crown as the fountain of honour, and created titles for themselves, so that such letters as F.R.S. became more esteemed than those like K.C.B. This separation of the Crown from learning was not wise in the interests of Monarchy. The Prince Consort readily admitted this, and asked what I would recommend. I suggested that it would produce a favourable impression if one or two men of undoubted position were made privy councillors, mentioning Faraday and Babbage as two men entitled to this honour. Shortly after this conversation I was commissioned to sound the philosophers and ascertain whether they would like to be appointed to the Privy Council. Unfortunately I first went to Babbage, who was delighted with the suggestion, but made it a condition that he alone should be appointed, as a reparation for all the neglect of the Government towards his inventions. Even the association of such a distinguished man as Faraday would take away from the recognition which was due to him. This condition was naturally disagreeable to the Prince Consort, and no further steps were taken to open the Privy Council to men of science.

I must not forget the names of two friends who then and until their death showed me great kindness and

hospitality. They were the Lord and Lady Ashburton so often mentioned in the Life and letters of the Carlyles. Lord Ashburton was the most amiable of men. He took a warm interest in promoting scientific and artistic education. We co-operated with Lady Burdett-Coutts in promoting "a knowledge of common things" in elementary schools, and had frequent conferences on this subject. The purpose of this movement was to systematise object lessons in schools, and so lead to elementary instruction in science. We also brought out together a school book on 'Political Economy.' This was really written by Mr Ellis, who had tried to establish secular schools, though he feared that his name as author would interfere with its popularity among denominational schools. In these efforts Dr Dawes, the Dean of Hereford, gave his cordial assistance.

The character of Lady Ashburton has been so charmingly delineated by Monckton Milnes (Lord Houghton) that I would not refer to her had she not been so caricatured in Mrs Carlyle's descriptions of her. Carlyle himself knew the merits of Lady Ashburton and appreciated her at her proper worth. To me she was always the kindest and most gracious of friends. Her wit was sparkling, frequently satirical, but never ill-natured. Her hospitality, both at The Grange and in London, was admirable, and I never found it marred by any of those peculiarities which Mrs Carlyle describes. A far better account of The Grange and its guests than is to be found in the letters of Mrs Carlyle is contained in the biography of Taylor, the poet, although, perhaps, I think so because I am almost the only man whom he treats with civility in his descriptions of a week at The Grange.

In London Lady Ashburton's dinners were charming. At one dinner I have met at her house Dickens, Thackeray, Carlyle, and Tennyson. I remember at that dinner sitting next a remarkably handsome lady whose name I did not then know. She was a brilliant conversationalist, and took as her theme that no man of real talent had ever been in love. I quoted in opposition Abelard and Héloise,

Petrarch and Laura, Dante and Beatrice, and various other cases, but she classed them all as instances of illusion or passion, not of love. At last, turning round her chair, she said, "Tell me who you are and I will tell you who I am." To my pleasure I found that she was the authoress, Mrs Norton.

Another house at which I was a frequent guest was that of Lord Granville, in Carlton House Terrace. His guests were chiefly public men, and the dinners differed from those at Lord Ashburton's, but they were equally charming, as Lord Granville himself was admirable in anecdote and in his power of drawing out conversation among his guests. At one of these dinners in January, 1854, a curious discussion arose. Lord Granville had invited his colleagues in the Cabinet to dine with him, but discovered before dinner that thirteen would be at the table. Lord Palmerston would never dine with the fatal number, and I as an outsider, not then in politics, was invited to make an even number at this Cabinet banquet. After dinner Lord Palmerston produced a letter which had been written by a Bristol schoolmaster, remonstrating with the Prince Consort for injuring the English language by careless expressions in his speeches. The Prince had used the word "either" as covering more than two alternatives, and the schoolmaster contended that it should be confined to two. Lord Palmerston was singularly interested in this philological attack, and triumphed in the draft answer which the Prince proposed to send, and which he then read. The Prince Consort quoted Shakespeare, Beaumont and Fletcher, and other authors to prove that "either" covered any number of alternatives.

At this dinner I explained to Lord Palmerston Wheatstone's newly-discovered symmetrical cipher, which I thought might be of use in the Crimean War then pending. It consists in taking a key word such as "Palmerston," and writing the remainder of the alphabet symmetrically under it. The cipher to be sent consists of the letters at the opposite angles of the nearest rectangle. I told him that I had gone with Wheatstone to

the Foreign Office and explained it, but the Under Secretary objected to it as being too complicated. We proposed that he should send for four boys from the nearest elementary school in order to prove that three of them could be taught to use the cipher in a quarter of an hour. The reply made to this proposal by the Under Secretary was complimentary to our diplomatic service. "That is very possible, but you could never teach it to *attachés!*" I constructed an alphabet hastily with the key word "Palmerston," and showed to Lord Palmerston and his colleagues how it could be used. The next day I went to Dublin, and while there I received two short letters in cipher, one from Lord Palmerston, the other from Lord Granville, showing that they had readily mastered the cipher.

It was fortunate that the Department of Science and Art was founded in 1853, because the Crimean War broke out in the following year and heavily taxed the country. At the beginning of the war I wrote a letter to the Prince Consort which he forwarded to the Master of the Ordnance, suggesting one or two applications of science to the purposes of war. One was a hollow brittle shell containing phosphorus dissolved in bisulphide of carbon for the purpose of producing conflagration of the enemy's stores or property. The shell contained antimony, so as to make it break on a hard surface. It then scattered the liquid over the objects to be burned, and each drop, on drying, started a new centre of conflagration. As the fumes of phosphorus are apt to put out their own flame, a little beeswax or petroleum was added to prevent this. The Ordnance Department reported against this proposal, and I did not care to push it further; but ten years later the plan with exactly the same materials was adopted, and the inventor, who was an officer, received promotion, and I think a decoration. The Fenians have lately used this method of setting property on fire, and tried its effects on one of the Cunard ships.

The other proposal in my letter was to have a hollow brittle shell containing cyanide of cacodyl. This is an

intensely poisonous substance, a few drops of which in a room would poison the occupants. Such a shell going between decks of a ship would render the atmosphere irrespirable, and poison the men if they remained at the guns. This suggestion was considered inadmissible by the military authorities, who stated that it would be as bad a mode of warfare as poisoning the wells of the enemy. There was no sense in this objection. It is considered a legitimate mode of warfare to fill shells with molten metal which scatters among the enemy, and produces the most frightful modes of death. Why a poisonous vapour which would kill men without suffering is to be considered illegitimate warfare is incomprehensible. War is destruction, and the more destructive it can be made with the least suffering the sooner will be ended that barbarous method of protecting national rights. No doubt in time chemistry will be used to lessen the suffering of combatants, and even of criminals condemned to death. Hanging is a relic of barbarism, because criminals might be put to death without physical torture.

Soon after I had written the letter to the Prince Consort, Lord Dundonald, better known as Lord Cochrane, probably the greatest of naval heroes except Nelson, offered to Government his secret plans for taking fortresses without the usual methods of siege. Lord Dundonald felt convinced that he could take Sebastopol or Cronstadt in a few hours by his destructive agencies. He wrote to Lord Palmerston, then Prime Minister, offering to submit his plans to any two persons nominated by the Government. The Government appointed my former teacher, Graham, then Master of the Mint, and myself, to receive the secret communications from Lord Dundonald and to report on their probable efficacy. At that time Admiral Sir Charles Napier expected to receive, and did afterwards receive, the command of the Baltic Fleet, while Lord Dundonald fully hoped to obtain command of the Black Sea Fleet. Napier knew the secret plans, so the two old naval heroes used to come to my office, which was then at Marlborough House,

now the residence of the Prince of Wales, to discuss them I still possess two rude sketches drawn by each of these admirals, one by Napier as to how he proposed to attack Cronstadt, and the other by Lord Dundonald as to how he intended to attack Sebastopol. At that time I had an acquaintance with Admiral Napier, but a still better one with Lady Napier. They spoke of each other with affection but did not live together, except for one or two weeks in the year, when they entertained their friends to show that no quarrel existed between them.

Lord Dundonald was then to me a new acquaintance, but our intercourse speedily ripened into a friendship, although he knew perfectly well that I reported unfavourably as to the chief part of his invention, while I thought that the minor part, to which he did not attach much importance, was susceptible of extensive application. Lord Dundonald was, even then as an old man, a person who inspired great confidence in his ability, dash and daring. He was of commanding stature, and full of vigour. It was easy to understand how the men under his command had unlimited faith in his resources and prowess. He scarcely ever failed in a naval engagement, although when one reads his biography his plans appear to be wild and extravagant. Whether he would have succeeded with his secret methods, had he received command of the Black Sea Fleet, it is impossible to say, on account of his wonderful personal influence with sailors. But the Master of the Mint and I did not feel justified in recommending the Government to adopt them, and Lord Palmerston coincided with our views. Lord Dundonald, in spite of our unfavourable report, conceived for me a warm friendship, and continued to correspond with me to the end of his life. In the year 1886 I gave to his grandson, the present Lord Dundonald, all the papers relating to his grandfather's inventions, so that they are not likely to be lost to the world by my death, if my estimate of their value was not a correct one.

In the year 1855 there was the first great International Exhibition in Paris, and I was appointed one of the

Commissioners, Sir Henry Cole being the executive English officer. A new feature in this Exhibition was an international collection of pictures. The building allotted to them was so unsafe that Cole would not accept the responsibility of allowing English pictures to be displayed. A feeling of irritation arose between the French and English Governments on that account, and threatened to weaken our co-operation in the Exhibition. I was sent over to Paris by the Government to act as peacemaker, and after interviews with Fould, then Minister of the Interior, I persuaded him to erect party walls, which cut off the picture galleries from the rest of the Exhibition.

This was useful to me a few months later, when I went to Paris to look after the Jury work of the Exhibition. I already knew the leading scientific men of France, Milne Edwards, Dumas, Chevreul, Beron, Thénard, Regnault, Balard, Pelouze, Pehoot and others, and frequently enjoyed their hospitality. But I was not acquainted with the politicians or public men. The fact that the English Government entrusted me with the duty of overcoming a practical difficulty formed an introduction to the leading French Commissioners, and led to my becoming acquainted with French society in another aspect. In 1851 I had been introduced to Napoleon III. as President at St. Cloud, and now attended, at his command, a Sunday reception, in addition to the festivities which the Emperor gave to the foreign Commissioners. At that time the sanitary condition of Paris was under discussion, the sewerage being in a bad condition. The Emperor wished the advice of English sanitarians, and from my work on the Health of Towns Commission, thought my opinion might be of use. He also sent for our veteran sanitary reformer, Edwin Chadwick, who prepared a short speech for the occasion. It was epigrammatic in its brevity: "Sire," said Chadwick, "Cæsar found Rome built with brick and left it built of marble: it will be a great thing for you, sire, if posterity can say that you found Paris stinking and left it sweet!" The Emperor, who spoke English perfectly, was much amused.

Among my intimate friends in Paris I should not forget Arles Dufour, the Cobden of France. Our acquaintance began in a singular way. Arles Dufour was stranded at an inn in the Trossachs during a Highland tour, with his son, on account of some miscarriage of his remittances. I was breakfasting at an adjoining table, and he told me of his difficulty. He looked eminently respectable, so I offered him £20, and gave the name of my banker in London. On my return there I found the loan duly paid, and a letter asking me to visit him in Paris. This I did, and he gave me an interesting dinner at which Père L'Enfantin and other Socialists of the Fourier school were present. The venerable L'Enfantin used afterwards to write to me on subjects of public interest, especially about the Suez Canal. Arles Dufour himself was a man full of enthusiasm for public reforms, and had great influence on the educational progress of his time.

My old master, Professor Graham, continued to teach at University College, and I naturally saw a good deal of him. In 1855 the Mastership of the Mint became vacant. The office had been once filled by Newton, and was attractive to men of science. Graham asked whether I wished the office, in which case he would not compete with me, but if I did not he would become a candidate. I did not tell him that I ardently desired and intended to apply for it, but I felt that his scientific claims were much superior to mine, so I offered to use all my influence in his favour, and he was appointed Master of the Mint. It is, however, doubtful whether it was a happy office for a man of Graham's temperament. He was frequently exposed to public criticism, and felt it keenly. In my first year of Parliamentary life, in 1869, his administration of the Mint was attacked in the House of Lords, and I was able to defend it in the House of Commons.

My defence so pleased the Master of the Mint that he struck a special medal of an alloy of palladium and hydrogen, containing 900 volumes of that gas, to commemorate my aid. Graham died in the autumn of this year, leaving an unsigned will, in which I was named

as his executor. My old ambition to become Master of the Mint revived, and both Mr Gladstone, the Prime Minister, and Mr Lowe (afterwards Lord Sherbrooke), the Chancellor of the Exchequer, encouraged me to apply for the vacant office. But just at that time Lord Justice Clerk Patton died, and Mr Moncrieff, who represented Glasgow University, succeeded to his seat on the Bench. Had I also taken office, both Scotch University seats would have become vacant, and would have passed over to the Tories. This would have been too severe a blow to the Liberal party, so I withdrew my candidature for the Mastership of the Mint.

In 1857 I married Miss Jean Ann Millington,[1] a lady of some fortune, by whom I had a daughter, Ethel Mary Lyon, now married to Major Bloomfield. By this marriage I was no longer wholly dependent on the income derived from work, so I desired to obtain time for scientific research, and made an arrangement with the Government to give only half my time as an Inspector of Schools of Science. It was fortunate that this arrangement was made, for in 1858 the Chair of Chemistry in the University of Edinburgh became vacant by the death of Professor Gregory, and I was appointed to that much coveted professorship.

With regard to the suggestion of an Order of Merit, of the collapse of which Playfair gives so amusing an account in the preceding chapter of his Reminiscences, the following letter is of interest:—

Colonel Grey to Playfair. BUCKINGHAM PALACE, *March 8th*, 1856.

MY DEAR PLAYFAIR,—I have read your letter to the Prince, as you desired. His Royal Highness was called away directly afterwards, and I am not in a position to say what his opinion may be. For myself, I have a feeling (I can call it no more, not having given my consideration to the subject) against the extension and

[1] Playfair's first wife had died in 1855.

multiplication of British orders. Nor can I quite see as strongly as you do the danger of fostering a democratic feeling, if men of science and industry are to continue to look, as they have hitherto done, to societies, medals, and the letters which speak the members of such societies, for the public evidence of their position in the scientific and industrial world, instead of to honours received at the hands of the Queen. I could wish that they had not gone so far in my own profession, where such distinctions are become almost worthless; and the difficulty of discriminating between conflicting claims has there been found so insuperable that officers commanding troops in any action for which a distribution of such honours is thought right, are actually forced, as the only way of solving the difficulty, to name *every* man holding a particular rank in such affairs. The Duke of Wellington, well knowing this difficulty, and the impossibility of giving satisfaction, always wisely set his face against the system of medals and decorations; and I believe he was right. But I need not argue the question with you. This matter will not depend upon any opinions of mine, and I have already this afternoon more writing to do than I can well get through before dinner-time.

Ever yours truly,

C. GREY.

Playfair in 1855 sent Professor Faraday a box of the new matches which were just being introduced to replace the evil-smelling sulphur match that had hitherto been in use. In view of subsequent experiences in English match-making the answer of the great scientist is interesting.

Professor Faraday to Playfair.

ROYAL INSTITUTION,
October 30th, 1855.

MY DEAR PLAYFAIR,—I was very sorry to miss you this morning, but inexorable time stole you away, and I know so well the value of it to an occupied man that I cannot but allow to others the power I am often obliged

to reserve to myself. Many thanks for the box, which is very curious, and apparently good. I have seen them before. Do you think they will come into use? I was much struck by an observation Liebig made to me the other day when he was here, and we were talking over just such a box. "But your match-makers have not the phosphorus disease in the jaw," said he; "it only occurs in Germany." And when I asked him the reason for that, he seemed to give it in the bad ventilation and closeness of the German shops, combined with the presence of phosphorus vapour.

Ever your obliged

M. FARADAY.

Admiral Sir Charles Napier to Playfair.

MERCHISTON, *April 12th*, 1855.

MY DEAR SIR,—Many thanks for your note. I shall be in town on Saturday and Monday, and I hope soon to have the calculation. I suppose the iron vessels will be launched next week, or one of them at least. They appear to me to have committed a great error with the mortar vessels. They have not engines in them, which I look upon as of great importance. Should they be placed at a proper distance from a battery and had engines, when the enemy got their range all they would have to do would be to go ahead or astern a little, and that they could do without it being observed, and the enemy be thrown out. And although firing their mortar, they could keep moving a little to the right or left, the chances are they would never be hit; but without an engine we must employ a steamer to move them, which would be observed by the enemy, and that would be two chances of damaging us. We are fated to do everything that is wrong.

Yours very truly,

CHARLES NAPIER.

This letter bears upon a side of Playfair's indefatigable industry to which he has made reference in his auto-

biography. His attempts to induce the military authorities to employ new agencies in war were not successful. He himself regarded his failure with some impatience, and attributed it to the stupidity of the authorities. Thus he endorsed in his own hand the formal reports of a certain department upon experiments made, in accordance with his suggestions, with materials for setting fire to the sails of an enemy's fleet: "Absurd report. To make experiments in absence of the inventor is foolish. The objections here made could easily have been removed." Throughout his life he hated red tape, and though so much engrossed in official work, was the implacable enemy of the official temperament. When he saw that a thing needed to be done he set about doing it, perhaps without too much regard to the strict rules of official procedure. In a similar spirit, although a man of exceptional kindness and tenderness, he put aside as ridiculous the humanitarian objections to the use of warlike appliances of excessive efficiency. Was not the object of war to destroy an enemy as quickly as possible, and the more speedily and painlessly that could be done, the better? Playfair's intensely practical spirit, it will be seen, displayed itself on many different fields of action.

Baron von Liebig to Playfair. MUNICH, *September 17th*, 1856.

MY DEAR PLAYFAIR,—Dr Daubeny, who was good enough to visit me on his journey to Vienna, informed me that you had given your intended lecture on Agriculture in July, and that it was very interesting. This leads me to beg of you kindly to send me a copy of it, as it may perhaps be useful to me in the new edition of my 'Agricultural Chemistry' which I am now preparing.

Meanwhile, my answer to Lawes and Gilbert has appeared in the 'Journal of the Royal Agricultural Society,' No. XXXVII. You may perhaps have read it. If so, I should like to hear your opinion on it. I have firmly

resolved to carry this fight through to the end, and shall not lay down my pen until the laws of Nature, which we are defending, have carried the day. At present my fixed idea is to devote myself entirely to practical agriculture, and to found a school for teachers of agriculture, as thirty years ago I did for practical chemistry. I consider that such a school is the greatest necessity of our time, and that there is nobody who could carry out such an enterprise so well as I. I have no doubts about its success. On the other hand, it seems very foolish to give up a position such as no other man of science in Europe holds. I have so far cherished no wish which the King has not granted, but I am weary of playing the schoolmaster and giving lectures which others could give as well as I. All my thoughts are devoted to the spread and profitable application of scientific principles in agriculture. I regret that my friends three years ago were too hasty in giving me a testimonial recognising my services. If this matter were now brought before Parliament by the Duke of Argyll, it is not quite impossible that Parliament would grant me a pension of £300 to £400, which would suffice to enable me to resign my professorship, and to live three or four months in the year in England or Scotland, and devote myself entirely to agriculture. With the great resources which the Royal Agricultural Society possesses, very much might have been done, but they do not know how best to employ their money, and much is wasted with no results. Some Americans have proposed that I should go to America, assuring me that the United States would certainly provide me with all the land and money I required. But first I should like to take a trip there and see more of the prevailing conditions.

It would give me great pleasure if you would pay us a visit in Munich. I was four weeks at the baths of Gastein, in Salzburg, and am staying here during the holidays.

Farewell, dear Playfair; let me hear something of you soon. Most sincerely yours,

J. v. LIEBIG.

Same to the same. MUNICH, *March 30th*, 1857.

MY DEAR FRIEND,—I have just received the report of the meeting of the members of the Royal Institution, Part VI., and find in it your lecture on the principles involved in agricultural experiments, which I have read with great pleasure. You have set forth in it in a clear and lucid manner the principal object of such experiments, and estimated those of Lawes at their real worth; your examples and illustrations are so simple and so easily grasped that every farmer must understand them. Faraday had already written to me about your lecture, which he thought must put an end to the long controversy which is still going on in Germany. I am at this moment engaged in writing a fresh pamphlet against Stockhardt and Co. The so-called nitrogen theory leads to such absurdities that all reasonable people must unite in opposing it. Stockhardt maintains, for instance, that 100 lb. nitrate of soda are equivalent to 2,800 lb. of stable dung, because they contain the same quantity of nitrogen!!

Walter Crum wrote to me about a project which he had discussed with Young, and which has also been laid before you. They wish to make up a sum of money by subscription to enable me to carry out in England my ideas on agriculture. I have, therefore, written to Crum and asked him to let this matter entirely drop; it looks as though my only object was to make money, whereas really I never thought of it. In the heat of the controversy with Lawes, I eagerly seized the idea of founding an agricultural school, in order to have an opportunity of putting my principles into practice. But now I see that progress cannot be forced, but must develop gradually like a plant. I can do a greater and more widespread work through teaching than through example, and by endeavouring that those experiments which I deem most important should be carried out in many places simultaneously. This opportunity is now within my grasp; German agricultural associations and chemical laboratories are numerous, and are inclined to carry out any

suggestions of mine. Thus I have the means practically in my own hands, and it is, therefore, unnecessary to give up my present position. It would have been a foolish thing to do, as it brings me in £500 to £550 a year, which, added to my other resources, makes my income about £1,100, which enables one to live very comfortably in Germany. I could never have consented to accept a sum raised by subscription by private individuals. Such an arrangement would probably carry with it obligations and expectations which could not be fulfilled. It is well meant by Crum and Young, but not practicable.

Always, my dear friend,

Sincerely yours,

J. v. LIEBIG.

CHAPTER VIII.

LIFE IN EDINBURGH.

Playfair "the Man Behind the Scenes"—Scientific Honours—Place in Society—His Passion for Scientific Research—Appointed Professor of Chemistry in Edinburgh University—Resigning his Post as Gentleman Usher AUTOBIOGRAPHY: Chemical Theories and Their Exponents in Edinburgh University: Sir Robert Christison: Sir James Simpson and Experiments in Anæsthesia: Reforming the University: Declining the Office of Principal: Giving the Prince of Wales Lessons: Royal Students at the University: Death of the Prince Consort: President of the Royal Commission on the Herring Fishery: Appointing the Jurors for the International Exhibition of 1862: Lord Stratford de Redcliffe: Honours from Foreign Princes: A Member of the Royal Commission on the Cattle Plague: Anecdote of the Princess Alice: A Visit to Coburg: Dr John Brown: The Marquis of Tweeddale: Lady Ruthven: Leaving Edinburgh. Playfair's Professorial Zeal—His Work for the Exhibition of 1862—The Prince of Wales and the Cauldron of Boiling Lead—Playfair and the Edinburgh Memorial of the Prince Consort—His Unpopularity in Connection with the Cattle Plague Report.

IN the year 1858 Playfair entered his fortieth year. Nearly half his life had been spent in England, first in Lancashire, and subsequently in London. He had compressed into that comparatively short period an amount of work which it is given to few men to accomplish in a lifetime. He had advanced from obscurity into public fame. He had become the personal friend and trusted adviser of many of the greatest in the land, beginning with the Prince Consort. Above all, he had been the powerful instrument by means of which a great revolution in our educational system had been accomplished. The public, it is true, did not then understand how large a part he had played in the formation of the Science and Art Department, and in the establishment of the new system

of technical education. Still less did it know of his early labours in the field of national sanitation, or the share, significant though limited, which he had in influencing Sir Robert Peel in his resolve to break down the import duties upon food. Nobody save those who had been the associates of Playfair in his labours really knew what the extent and importance of those labours had been. To the world at large he was then, what he remained largely to the end, the man behind the scenes.

But certain visible signs of his success had been accorded to him. He held an office in the Household of the Prince Consort, and a post of importance in the public service. He had received the Companionship of the Bath, and had been offered many foreign orders; he had been President of the Chemical Society, of which he was one of the founders; was a fellow of the Royal Society, and had secured most of the honours which are recognised in this country as the rewards of scientific eminence. Above all, he had gained a special place of his own in the cosmopolitan society of London. Everybody who knew him at all, knew that a dinner-table was made the brighter by the presence of a man who wore so vast a load of learning "lightly as a flower," who not only possessed immense stores of knowledge, but had the art of imparting that knowledge in the easiest and pleasantest fashion to others, and who had, beyond most men, the gift of winning the confidence and good will of all who were brought in contact with him. It seemed to his friends that his place in life was now definitely fixed, and that he would remain upon the great stage of London, an eminent public servant, whose talents and energies would continue to be devoted to that branch of national work which lies outside the range of party politics. The Science and Art Department, and the development of the practical work of scientific teaching of which he was

to so large an extent the founder, seemed likely to absorb his energies for the remainder of his days.

But Lyon Playfair's original passion for scientific research had never left him. He looked back with yearning to the days when he had been a student in the laboratory at Edinburgh, and had made those original investigations which first secured for him the good will of the great Liebig. He looked forward from the busy days which he had to spend in the company of princes, great noblemen, and Ministers of State, to the time when he could return to his first love, and, withdrawing from the glare and bustle of public life, find the task that best suited him in the tranquil labours of a professorship. It is necessary to touch upon this point, because men of science are traditionally censorious in their treatment of those of their number who abandon the pursuit of science in the abstract for the practical work of life, even when that work is more or less directly connected with progress in scientific knowledge. Playfair did not during the course of his long and busy life escape the criticisms of some of his more censorious fellow-scientists. Up to the end of his days there were those who were inclined to look upon him in the light of "a good man who had gone wrong." Ignoring the immense services which he had rendered to his fellow-countrymen and to the State, they deplored the fact that he had ever been induced to abandon his original work as a student of chemistry, and professed to believe that nothing he had done in the way of public service could compare with what he might have accomplished if he, the friend and pupil of Liebig, had devoted his life to original research. It is only fair that it should be known that when Playfair was drawn out into public work it was by a force which seemed at the time to be irresistible. When a public duty was to be done, and he knew that he was the man who could

do it, nothing—not even his intense love of learning and research—could prevent his undertaking the task. But when it was accomplished, and there was an opening for his return to his first love, he availed himself of it with an eagerness that was almost touching.

Thus it came to pass that in the year 1858 he went back to the Scotland which he had left as a boy, in order to take up the dignified and important post of Professor of Chemistry in the University of Edinburgh. His biographer must leave Playfair himself to describe the conditions of his life in his new post at Edinburgh, and his surroundings at the University. It was unquestionably a great trial to him to leave London, with all the intimate friendships he had formed there, and to sever the links which bound him to great and beneficent public enterprises. Let those rigid scientists who seemed sometimes inclined to regard him as one who had been false to the higher ideals of scientific work, give him credit for the resolute courage with which he made this sacrifice when it became possible to do so.

His eminence, both as a chemist and as a public servant, ensured his success in his candidature for the Edinburgh chair. Testimonials of the ordinary kind were hardly needed by him, but with the thoroughness which characterised him in every work he undertook, he made it his business to secure them.

Playfair to Professor Frankland.

34, CLEVELAND SQUARE,
May 22nd, 1858.

MY DEAR FRANKLAND,—Very much against my own wish, I am forced into having some testimonials as a reserve in case of necessity, and as a reply to the assertion that I am unable to procure any. Every chemist seems to have given to every candidate testimonials, and if they have any chemical virtue in them, they should have only neutral effects. If you can, could you embody the

following points in a letter to me? You will see they relate to the specific points of my continued attention to chemistry, and will therefore steer clear of general testimonialisation.

(1) As to my general scientific position in London.

(2) As to the fact that I continue laboratory practice, and have not abandoned chemistry.

(3) That as President of the Chemical Society I have shown that I study chemistry.

(4) That I have some powers as a lecturer.

I am sorry to bother you, but my friends in Edinburgh insist upon my being provided with testimonial letters, to be used only in case of necessity.

ST. BARTHOLOMEW'S HOSPITAL,

Professor Frankland to Playfair. *May 25th*, 1858.

MY DEAR DR PLAYFAIR,—It is with no inconsiderable pleasure that I hear of your intention to become a candidate for the vacant chair of chemistry in Edinburgh. The deep interest which you have continued to take in the progress of chemical science, and the fact that you did not abandon even laboratory pursuits during a period when the onerous duties of your appointment in connection with the Board of Education must have severely taxed your time, caused me to feel little surprise at your seeking so eligible an opportunity of again devoting yourself exclusively to the pursuits of our science. Your high scientific position in London, and the admirable way in which you have filled the office of President of the Chemical Society, are sufficient guarantee that your official duties have not been allowed unduly to interfere with your chemical studies. In the teaching of science, like that of chemistry, the power of placing the chief facts and generalisations before students in a striking and lucid manner cannot be over-rated; and as I know from ample personal observation that you possess this power in a very rare degree, and as at the same time you have always won the regard and esteem of your pupils, I have the greatest confidence that the mantle of your renowned predecessor

in the Edinburgh chair would worthily rest upon your shoulders should you succeed in obtaining the appointment.

Trusting that chemistry will thus soon again have the advantage of your undivided attention,

Believe me, etc.,

E. FRANKLAND.

Professor Faraday to Playfair.

ROYAL INSTITUTION,
May 25th, 1858.

MY DEAR PLAYFAIR,—That such a question should arise! I cannot give—*i.e.* volunteer—a certificate for circulation; it is against my rule; but if any one asks me whether you are able to expound the truths of experimental science to a large number of persons in a clear, logical, audible, and, to me, satisfactory manner, I should have no need to consider, but must from my own experience say "Yes" at once. Anyone concerned in the matter may write to me, or you may show them this note, which contains what would be my answer.

Ever truly yours,

M. FARADAY.

On June 29th, 1858, Baillie Blackadder, the acting chief magistrate of Edinburgh, officially notified Playfair of the fact that he had on the previous day been appointed Professor of Chemistry in the University, "in room of the late Dr Gregory." So, after nearly twenty years of absence, he returned to the capital of his native land to occupy a position of exceptional dignity and influence. The first step which his appointment imposed upon him was the resignation of his office as a member of the Prince Consort's Household. Writing to General Grey, immediately after the appointment had been made, Playfair, after asking him to announce the fact to the Prince Consort, said:

"I found my scientific knowledge rapidly slipping away from me owing to my public duties, and I could not resist taking the only chair which was worth having in order to enable me to devote myself more exclusively to science. My lectures occupy from November to the end of April. I still intend to spend May, June, and July in London. I believe that I could perform the duties of the office which I have the honour to hold in the Household of the Prince Consort, by an occasional interchange of duties with my colleague, such as we have been hitherto accustomed to make for each other. But although I am very unwilling to break a connection which has given me so much pleasure, and to dissever myself from service with a Prince who has given me so many reasons to be attached to his person, at the same time, as there might be some irregularities in that service, I think it right to place my resignation in your hands, and to beg you to convey to His Royal Highness the profound sense of gratitude and affection which I feel for the many kindnesses which he has bestowed upon me."

Sir Charles Phipps to Playfair. OSBORNE, *July 9th*, 1858.

MY DEAR PLAYFAIR,—Grey is away, and I have opened your letter of the 7th, and stated its purport to the Prince. His Royal Highness commands me to say, in reply, that he should be very sorry to lose you from his Household, and that he thinks, by arrangement with Admiral Blake, your duty might be easily provided for. For instance, if he were to take March and April, and you May and June, all the occasions upon which the attendance of a Gentleman Usher is required might be provided for.

It would only be in the event of its proving impossible that your two duties could be made compatible that His Royal Highness would accept your resignation.

The Prince commands me to forward to you his hearty congratulations upon your appointment to a post for which you are so eminently fitted.

Sincerely yours,

C. B. PHIPPS.

A few months later Playfair found that, in spite of the kind consideration of the Prince, he could not discharge even the modified programme of his duties as Gentleman Usher, and in January, 1859, he finally resigned his post. The Prince, in accepting it, expressed the very sincere regret with which he lost him from his Household.

Even in his own country a prophet may not be without honour. Playfair was still remembered by his old friends in St. Andrews and other Scots towns, chiefly as the boy who had shown so great a fondness for study and so keen a knowledge of how to get through his work in the shortest possible space of time. Now he had come back to them in a position which in Scotland has always been regarded as one of peculiar honour. One of his old acquaintances wrote as follows to his mother upon the occasion of his appointment :—

MANSE OF MOFFAT, *July 5th*, 1858.

MY DEAR FRIEND,—I learned from Mr Lindsay, who kindly came up to me in church yesterday, that you are in St. Andrews, and so I write to-day, though really I have nothing to say but only to inquire after your welfare, and to express my hope that you are pleased with Dr Lyon's appointment to Edinburgh. No doubt his life in Edinburgh will not be so splendid as his life in London. But I should suppose that the pleasures of Court favour are not without much trouble and loss of time, which a studiously-disposed man must grudge, and besides, he has had that sort of pleasure. The future could be little more than a repetition of the past, which is always more or less wearisome. In Edinburgh he will take his place at the top of society, and will be able to command much of his own time. He will also be the head of chemical philosophy, for the Edinburgh chair is looked upon in Europe as higher than any other, and he will have the pleasure of finding himself surrounded by a school of young chemists who will not be long in recognising him as their master. As to

emolument, happily he is not dependent upon that, but I remember the day when the chemical chair in Edinburgh was worth £2,000, and doubtless under your son it will revive fast. I don't know whether you ever heard Lyon lecture to a scientific auditory. I had that pleasure at the School of Mines. Nothing can be finer. His fluency is perfect as it is in social conversation. His hearer feels that he is speaking to *him*, which is an immense matter, though rare in scientific men, who are apt merely to discuss their subject and hold communion with it or their own thoughts, which never fails to make them dry and uninstructive. I am delighted with the appointment, because I think your son has deeper insight into the philosophy of chemistry and the economy of matter than any other body; and now that his time will be his own I am sure he will go on making great discoveries. So much interested was I that I went to the Council chamber, and though too late for the vote, I succeeded in forcing a seat beside a councillor, from whom I asked the result. He did not know me, nor do I know who he was; but you will be pleased to hear what he said. "I did not vote for Dr Playfair myself," said he, "but I could not but admire him when he called upon me, for he said: 'Well, if you will not vote for me I can assure you you will do well to vote for Professor Anderson. Of course I don't mean to say but that I should like you to give me your vote, but if not, Anderson is a first-rate man in every respect.'"

AUTOBIOGRAPHY CONTINUED.—VII.

1858 to 1868.

AT this time I was President of the Chemical Society, and once more I succeeded in breaking away from public life to enjoy the quiet of an academic office. The Chair of Chemistry in the University of Edinburgh has always been the chief ambition of scientific chemists. My predecessor, Professor Gregory, was an accomplished man of science, and had a thorough knowledge of modern chemistry. He had not been able to found a teaching laboratory on a scale com-

mensurate with the importance of the chair. This I determined to do, so far as the limited accommodation then in the University would permit. Before entering upon my duties as a professor, a considerable sum had to be spent in equipping the laboratories and chemical museum with the full appliances for teaching.

My introductory lecture was attended, as is usual, by all the professors, and by many residents of the city interested in science. The subject of the address was "A Century of Chemistry in the University of Edinburgh." It was interesting to observe how entirely chemistry had changed during that century, and how well the profession in Edinburgh had represented the changing periods. At the beginning of that epoch the theory of phlogiston held universal belief. Phlogiston was the principle of heat, and it was believed that as it was present or absent from bodies their fundamental characteristics changed. Cullen taught this from the chair which I now occupied. It was a theory that was fitted for the time, because it brought within itself a vast number of facts hitherto disconnected. An ore was heated in the fire and it produced a metal, because the principle of fire entered into it. The ore was in fact metal *minus* phlogiston, while the metal was the ore *plus* phlogiston. The use of the balance upset this famous theory, and no one did more than Black, Cullen's successor, to apply weight and measure to all experiments. When a metal was burned it produced a calx which weighed more than the metal, and when the latter was reproduced by calcination in a furnace it became lighter. How can this be explained? said the doubters of the phlogiston theory, for if phlogiston pass out of the calx and go into the metal the latter should increase in weight? The upholders of the theory boldly answered that phlogiston is the principle of lightness as well as of fire, so when it enters a body that body becomes lighter. Thus lightness is not a negative quality—the absence of weight, as darkness is the absence of light—but it is a positive entity. My predecessor, Black, who discovered the laws of latent heat, and the nature of the air which we

now know as carbonic acid, and who experimented with the balance in his hand, felt that the grand edifice of phlogiston was giving way, though he was too old and timid to abandon it. We now know that an ore becomes a metal because it loses oxygen, and that a metal burning in air becomes heavier because it absorbs oxygen. Phlogiston gave a beautiful picture of nature, though it was nature turned upside down, and like a negative photograph it showed all the black white and the white black. Hope, the successor of Black, renounced the theory of phlogiston, and taught the theories of Lavoisier and the French School, and made chemistry an attractive study by the care which he bestowed on the lecture table. His successor, Gregory, represented the great changes which had passed over the science by the discoveries in organic chemistry, while I, who now lectured as his successor, was a sort of missionary to bring chemistry into relation with the industries of the country, which had too long been carried on by the rule of thumb.

There were several remarkable men among my colleagues in the Senate of the University. My old college companion Goodsir was in feeble health, though still Professor of Anatomy. My friend Edward Forbes, who had been Professor of Natural History, died before my arrival, and had been succeeded by the excellent naturalist, Professor Allman. The most active members of the medical faculty on my arrival were Sir Robert Christison, Professor Syme, Sir James Simpson, Professor Laycock, and Professor Bennett. It was natural, with my capacity for public business, that I should take part in the affairs of the Senatus Academicus, which met weekly and administered the affairs of the University. Formerly the Town Council had complete control over the University, but that had recently ceased. I was disappointed to find that many of my medical colleagues were in a state of chronic war with each other, and it required considerable tact on my part to keep myself clear of these professional disputes, and at the same time to remain friends with the disputants in my own faculty. I do not know whether

Edinburgh now continues to be the theatre of professional disputes, but it long had a bad reputation in that respect, for Franklin in his Autobiography says, "Persons of good sense . . . seldom fall into it [professional disputation], except lawyers, university men, and generally men of all sorts who have been bred in Edinburgh!"

The Nestor of the University was Sir Robert Christison. He was a tall and handsome man, even in his old age as straight as an arrow, with an elastic gait which showed how carefully he had preserved his physical condition. He scrupulously protected the finances of the University, and was willing to support reforms and to improve its condition. To me he was a kind and courteous friend, although our political opinions were absolutely opposite, so that at a future period, at the time of a parliamentary election, our friendship became somewhat strained.

Professor Syme, the eminent surgeon, was a short man of keen expression and of blunt honesty of character, though with strong prejudices. His students highly valued his lectures and clinical instruction. He was greater as a professor than as a Member of the Senate, where calm consideration of questions was required, uninfluenced by personal antipathies.

Sir James Simpson was a man of great personality and power. He had the body of a Bacchus, with the head of a Jupiter. His mind ranged over a great variety of subjects—medicine, antiquities, history, and politics—and this diversity of interest made him sometimes negligent of his professional practice. As the introducer of chloroform into surgery he is universally known. In Scotland there used to be an antipathy to objects not mentioned in the Bible. On this account, potatoes were only slowly adopted by the Scotch. Simpson had many struggles before chloroform was adopted. Not only was it unknown as a Biblical noun, but it positively was in direct contradiction to the curse upon woman that she shall endure sorrow in bringing forth children! Simpson adroitly answered the religious objections to chloroform by saying that God, when He performed the operation of

taking out one of Adam's ribs, first put him into a deep sleep such as chloroform produces!

Simpson was constantly experimenting with new anæsthetics. On one occasion he came into my laboratory to ask whether I had any new substance likely to produce anæsthesia. My assistant, Dr Guthrie, had just prepared a volatile liquid, bibromide of ethylene, which I thought worthy of experiment. Simpson, who was brave to rashness in his experiments, wished to try it upon himself in my private room. This I absolutely refused to allow, and declined to give him any of the liquid unless he promised me first to try its effects on rabbits. Two were procured, and under the vapour quickly passed into anæsthesia, coming out of it in due course. Next day Simpson proposed to experiment upon himself and his assistant with this liquid, but the latter suggested that they should first see how the rabbits had fared. They were both found to be dead! This has always appeared to me to be an excellent argument for experiments on living animals. By the sacrifice of two rabbits the life of the greatest physician of his time had probably been spared. Simpson was a keen academic reformer, and, though naturally not of a quarrelsome temper, he was in a state of chronic war with his medical colleagues. Christison and Syme were bosom friends, but always at war with some of the other professors. Both, however, would unite with Bennett, Laycock, and others in opposition to Simpson. I was always on terms of intimacy and friendship with the latter, and, probably because I was outside the medical profession, retained my friendship with the others also.

At this time the University required considerable reform. The old tradition of classes prevailed. The numbers of students were too large in each class for effective teaching. I introduced into the class of chemistry a tutorial system like that of *répétiteurs* in France. The tutors followed my course of lectures, and drilled the students in practical exercises upon the subjects which I had discussed. The system of examinations prevailing at the University discouraged the students, because only two or three of them

could carry away the prizes, while those forming the remainder of the class became discouraged, and ceased to attend the examinations. I made each separate examination of the value of 100, and enrolled all students who obtained 75 per cent. or upwards of the marks in the first list of honours, and gave to each a bronze medal, while those who obtained between 50 and 75 per cent. received certificates in a second class of honours. This gave great life to the class, and sustained a general competition all through the session. Formerly the marks at each examination had been an arbitrary number. The simplicity of the percentage system was very useful, as the parents of students understood it, and they consequently took an interest in the results of each examination, and encouraged their sons to work. This has now become general in the University of Edinburgh, and has extended itself to other educational institutions. I have found it to prevail in American colleges, perhaps from imitation, though more probably from initiation.

The next step was to produce a feeling of pride among graduates, so as to interest them in the future of the University. Ceremonials of graduation had fallen into abeyance, and academic costume had almost ceased to be worn. The professors did wear gowns, but had no hoods to indicate their special degrees. In the efforts to restore academic dignity to the University there were many willing workers. Professor Campbell Swinton and Professor Lorimer in the faculty of Law, Professors Wilson, Killand, and Fraser in the faculty of Arts, joined heartily in the new movement. The conditions for graduation were revised, and graduation itself was made a stately ceremony, every graduate having to appear in academic dress with appropriate hoods invented for classification. This gave a great impulse to graduation, and the number of graduates in each faculty increased largely. This was followed by a Royal Commission under the presidency of Lord Justice General Inglis, now the Chancellor of the University. By his influence the House of Commons increased the annual vote to the University, leaving it to

the Executive Commission to distribute these funds in the most effective way. The Act founded a General Council of all graduates, so as to maintain their continued interest in the University. This Council is consultative and advisory, while the Senatus Academicus still remains the executive, subject, however, to a University Court consisting of the Chancellor, Lord Proctor, Principal, and other representative members. These reforms, to which I gave a hearty co-operation, introduced a new academic life, and have led to the present remarkable prosperity of the University.

Soon after I entered the University as professor, the great philosopher, Sir David Brewster, was appointed Principal. He had already filled a similar office in the ancient University of St. Andrews. Brewster's scientific fame and his natural dignity of demeanour made him specially fitted for such an important post. He was a man of polished manners, which conveyed the impression of a suave and gentle disposition. But he had the serious drawback of being singularly litigious, and he little understood the art of compromise and conciliation. He had no sooner entered on his duties than a lawsuit between Brewster and Forbes became imminent. Professor Forbes, the distinguished physicist and author of an important work on glaciers, had been appointed to the office of Principal in the University of St. Andrews, vacated by Brewster's promotion to Edinburgh. Disputes arose about the emoluments divisible between the outgoing and the incoming Principal. Forbes was a tall, stately man, upright and honourable in character, though stern in demeanour, and unbending on a question involving his rights. It was pitiable to contemplate a quarrel and lawsuit between two such distinguished philosophers as Brewster and Forbes. One morning both of them called upon me, and asked whether I would act as umpire in the dispute, agreeing absolutely to be bound by the terms of my award. I accepted the office, but intimated my fear that I was certain to displease one of them, and that I valued much the friendship of both. Happily, however, my award

gave complete satisfaction to both disputants, and I had the pleasure of receiving copies of all their works, and a grateful letter of thanks from each as an acknowledgment of my services. Brewster thus learned the usefulness of arbitration, and on two occasions after this asked my aid to settle his controversies. One of these was to determine his claims to discovery in lighthouse illumination, and this proved a heavy undertaking.

When Brewster died (February, 1868), the succession to the office of Principal produced considerable bitterness. Sir James Simpson desired to have this dignity, and his eminent scientific position entitled him to become a candidate. But this was intolerable to his medical colleagues. Sir R. Christison, who was the most respected and in administration most useful of all the professors, thought it necessary to save the University from the difficulties likely to follow Simpson's success, by intimating that he was willing to accept the office of Principal. Professor Syme had also come to the conclusion that he should oppose Simpson, and he also desired to be a candidate. The two life-long friends, Christison and Syme, thus came into collision at an advanced period of their life, and found it necessary to extricate themselves from this dilemma. They both came to me and offered to withdraw their claims in my favour if I would accept the office of Principal. No doubt I could easily have obtained it with this backing, but I could not oppose Sir James Simpson, for whom I had so much friendship and esteem. The difficulty was ultimately removed by the appointment of an outsider, Sir Alexander Grant, the author of a work on Aristotle. This proved to be an excellent appointment. Grant has left the new buildings of the University as a monument of his devotion and zeal in its interests. At his death I was again invited to become Principal, but I declined, as my parliamentary life interfered with the proper discharge of the duties of the office.

Among the pupils whom I had at my class in Edinburgh, there are two whom I ought to mention. I had a correspondence with the Prince Consort, informing me

that it was considered desirable to send the Prince of Wales to the University of Edinburgh, and asking me what should be his course of study. I thought that, considering the future position of the Prince, it would be best that I should give him a special course of lectures on the chief manufactures of the kingdom, and that, after studying the scientific processes involved in a manufacture, we should visit some mill or factory to see it in practical operation. The Prince of Wales came to Edinburgh, and resided at Holyrood Palace during the time that this practical course of instruction was carried out. The natural quickness and intelligence of the young Prince made it easy to carry out this course of study. I believe that it was appreciated by him, and it certainly was by the Prince Consort. To prevent the course of instruction being too tedious, various excursions were made.

On one occasion we went through Rob Roy's country, the Trossachs and Loch Lomond. The Prince was accompanied by his governor, General Bruce, a man of sterling character, and his tutor, the Rev. Mr Jarvis, the most agreeable of men. As the rooms at the hotels were engaged for Professor Playfair and his pupil, the Prince tried to travel *incognito*, so that we could go on coaches and steamboats without inconvenience. But not a single day passed without discovery of the interesting traveller, and then the inconveniences dependent on an exalted position became apparent.

The success of the experiment with the Prince of Wales induced the Queen and the Prince Consort to send their second son, Prince Alfred, to the University. In his case a more systematic course of science was desirable, and the Duke entered into his studies at several classes with much diligence and intelligence. As he resided at Holyrood Palace and entered with enjoyment into the social life in Edinburgh, he became intimately acquainted with the city, which was afterwards taken as the title by which he is now known, the Duke of Edinburgh.

The exiled French Princes also sent their sons to

Edinburgh for part of their education. I received the commands of the Queen to place my services at their disposal. The Duc d'Aumale, Prince de Joinville, and the Duc de Nemours came with their sons. With the view of introducing them to the leading people in Edinburgh, I had a dinner-party, to which their Royal Highnesses came, and in the evening there was a large reception attended by the young Princes, the Duc d'Alençon, the Prince de Condé, and the Duc de Penthièvre. They were then too young to attend the University, so they entered the High School, and also another school, for scientific instruction. The people of Edinburgh were much interested in the young Princes, and afterwards gave them ample hospitality. The Prince de Joinville took a lively interest in the scientific institutions of the city, and for some time honoured me with correspondence. I possess a long and interesting letter from him about Lynch Law in America, which he had thoroughly studied as a rough and ready supplement to common law when defectively administered in unsettled States.

The 14th December, 1861, was a day of mourning for all the United Kingdom. I was at church on Sunday, the 15th, when a whisper went round that the illustrious Prince Consort was dead. To me this was a source of real sorrow. He had allowed me to co-operate with him in many of his measures for improving the condition of the people. The difficulties of his position as Prince Consort made it necessary for him to be reserved in intercourse with many persons, but to those whom he had once honoured with his confidence he was singularly affable and lovable. His letters to Baron Stockmar, published in the Life of the latter, show how thoroughly open and frank he was in communication with his advisers. He had one attribute most valuable to a Prince; that was that he was pleased by an honest opposition to his views, and discussed objections with perfect fairness. Even when in the royal household, I never was a courtier in the ordinary sense of that word, and I believe that my

opinion was valued because it was openly and honestly given, without courtly flattery. At his death I received a letter from one who knew him better than I did, and whose opinions are worth preserving. Sir Charles Phipps, the writer of this letter, was confidential secretary to the Queen, and was necessarily in daily intercourse with the Prince Consort. His letter, which fully expresses my own sentiments, is as follows :—

Sir Charles Phipps to Playfair. OSBORNE, *December 28th*, 1861.

MY DEAR PLAYFAIR,—I think there were few who appreciated and valued our beloved master better than you. It required minds like yours fully to know all his worth. You could not only mourn him from personal regard, but you were capable of knowing what the country has lost. It mourns him now as he should be mourned, but the full cause for sorrow will be better and better known each passing year. Even if I were a flatterer, which I never have been, there would be no profit in flattering dead princes, but I can safely say *now* that I never met so good and so truly great a man.

I mourn him as my master and my friend, but I mourn him now, far more, because I feel that in every relation in life, every department of good, every step of progress in good, one has been torn from us who cannot be replaced—has been torn from us just when his usefulness and his benevolence were at their zenith, when he had lived through calumny, and all were acknowledging his virtue and were inclined to look upon him in the future as a patron and guide.

It is almost too hard to bear, but God's will be done. I hardly dare to write of my own grief from the house of the poor, desolate, widowed Queen. But her calm, sorrowful, tranquil grief is a most touching, elevating sight. It is hardly possible to believe that a high sense of duty can bring out such a glorious condition of mind as hers. She does indeed deserve the love of her people.

Sincerely yours,

C. B. PHIPPS.

By the gracious desire of the widowed Queen I had an opportunity of paying the last tribute of respect to my beloved master at the State funeral, which took place at Windsor. Then all classes had realised the heavy loss to the kingdom. Brave men sobbed like children, and even the choristers broke down when they had to sing the requiem. But this grief was small in comparison with that of the widowed Queen and of the children who adored their father. That grief was too deep and too sacred to be fathomed by the public.

Although I was pursuing a quiet academic life in Edinburgh, the Government had not forgotten my existence when they were forming Royal Commissions for inquiry on important public subjects. A Royal Commission was issued to examine and report on the herring fishery of the British coasts, and of this I was appointed president. The chief member of this Commission was the well-known naturalist, Professor Huxley. After a thorough inquiry the Commission came to some startling conclusions which have laid the basis of modern fishery legislation in regard to sea fish as distinguished from river fish. Herrings had been allowed a close time like partridges and grouse, the close time not being uniform, but varying at different parts of the coast. The object of this was to protect the fish during their spawning, and so to keep up the supply. During the close time herrings could not be caught for bait, and the result was that cod and ling, their natural enemies, had a close time also, and devoured shoals of herrings at their leisure. We could not tell how many cod and ling were in the sea, but we had a return of the quantity salted, and supposing that they had remained in the sea with a diet of only four or five herrings daily, they would have caught more herring than all the fishermen of the United Kingdom and 600 added. The laws thus instituted for the protection of the herring led to their destruction, for close time multiplied their natural enemies and shut out the fishermen, who really reduced the latter.

The Royal Commission had been issued on account of the agitation of certain classes of fishermen for increased

protection, but, like Balaam, though called upon to curse the open sea fishermen, we blessed them altogether, and the close time was repealed.

In 1862 another great International Exhibition was held in London. I desired to keep out of this work, but I was much pressed to undertake the charge of the administration of awards, and to appoint the 600 jurors who were requisite on account of the large scale of the Exhibition. As some dissatisfaction was shown in 1851 as to the constitution of the juries, I asked all the exhibitors in each class to send me a list of six persons in whom they had confidence, and we appointed the jurors according to the number of votes. In this way we got together a remarkable collection of jurors. The foreign jurors were nominated by their respective commissions. The most eminent men were willing to serve. Mr Gladstone became a juror, as well as many leading statesmen of all countries. I took a house in London for the season, and had the pleasure of entertaining many distinguished foreigners. Among my most constant visitors was Michel Chevalier, the French political economist, a charming man, the Duc de Luynes, the French ambassador at Pekin during the war, the Marchese di Cavour, brother of the great Italian statesman, and many others. Lord Taunton was the chairman of the Council of Juries, and managed his task with great adroitness. Lord Stratford de Redcliffe, the prince of English diplomatists, had lately returned from the Turkish Embassy, and was chairman of one of the juries connected with decorative art. I had appointed Owen Jones, then the chief authority on decorative art, to be secretary of the jury, but the great diplomatist had never heard of him, and asked me why I did not give him somebody who knew something of the subject. Upon this Owen Jones made a remark which has often struck me for its truth: "In what a little circle we all live! Some of us think that we are famous; but it is only inside our little circle, and outside that the world knows nothing of us."

Lord Stratford de Redcliffe aided me in showing hospitality to the foreign jurors by agreeable dinners, at which

he took the top and I the bottom of the table. He was then in good health and vigour, but soon afterwards his long services told upon his constitution; yet when I last saw him, shortly before his death, his intellect was as keen and vigorous as ever. At the close of the Exhibition I received various honours from foreign sovereigns. From Austria I obtained the decoration of Commander of Francis Joseph, from Sweden that of the Polar Star, from Portugal the Order of the Conception, and from Wurtemberg another decoration. The King of Prussia presented me with two large porcelain vases representing the recovery of Achilles' armour from the sea.

Another onerous Commission was issued in October, 1865, in consequence of a heavy calamity having come upon the country. In this year the Cattle Plague broke out in England, and threatened the extermination of our herds and flocks. The panic among the farmers was great, and it was necessary to issue a strong Royal Commission to devise means for arresting the terrible plague. I was travelling on the Continent when I received a letter from Lord Granville asking me to return immediately and serve on the Commission. I was desirous that there should be another member upon it besides myself who should represent sanitary science, and I suggested the name of Dr Parkes, of Netley College. At that time Dr Parkes was little known to public men, but he afterwards laboured so much to promote public health that he wore himself ou tby his exertions, and died prematurely. The Commission was a strong one. The President was Lord Spencer, who in recent years has won so much fame by his firm administration of Ireland during its most disturbed period. Among the other members were Lord Salisbury, now Prime Minister and Mr Robert Lowe, now Lord Sherbrooke, who was one of the bravest and most far-seeing of all the Commissioners. The Commission made a thorough inquiry into the nature of the plague, its means of propagation, and the suggested remedies. Scientific men were employed to report upon all branches of the inquiry, but, though they threw valuable light on the

nature of the disease, no suggestions were made for staying its progress. Ultimately we made bold and sweeping recommendations that markets should be shut up in infected districts, all transit of cattle prohibited, and diseased cattle ruthlessly slaughtered and buried or burned. We saw that there was no other method than to stamp out the plague with an iron hand. Never was the report of a Royal Commission received with such indignation and contempt. Every newspaper in the country ridiculed the report, and attacked those Commissioners who were known to constitute the majority in favour of extreme measures. I published a pamphlet containing a history of the Cattle Plague from the earliest times, and gave the reasons for the conclusions of the Commission. This pamphlet had an extensive sale, and did a good deal to allay public indignation. Finally, Parliament became convinced that there was no other method of combatting the plague than that of stamping it out, and local authorities were required to follow our recommendations. The disease was then quickly stayed, and before long stamped out altogether. Twice in my life I have had to go through a season of great unpopularity. One was after the report on the Cattle Plague, and the other at a later period, after the reorganisation of the Civil Service on what is called "The Playfair Scheme." As I felt in both cases that I had acted to the best of my judgment, and believed in the wisdom of the recommendations, this temporary unpopularity did not trouble me.

The Cattle Plague Commission was issued in the autumn of 1865. In the summer of that year I was in Germany, and paid a visit which much interested me. This was to Kranichstein, the hunting seat of the Grand Duke of Hesse, in the Black Forest. The Grand Duke was absent, and Prince Louis and Princess Alice were then staying there. I had known the Princess since she was a child, and I much admired her many excellent qualities and cultivated mind in later years. Kranichstein is a simple little place, and so thoroughly in the forest that wild boars sometimes drank from the water under the

windows. I arrived on Sunday morning. The Prince and his visitors having gone to the chapel, and also the servants, Princess Alice kindly remained behind, in order to welcome me on my arrival. While we were conversing, a note came from Prince Louis to say that he would bring the Lutheran Minister to the mid-day dinner. This seemed to disturb the Princess, who told me that her table was small, and that there was absolutely no room for an additional guest, and as all the servants were at church the table could not be relaid. I reminded her that she used to entertain me at the Swiss Cottage at Osborne when she was a child, and that I knew she could lay a table better than servants. She was pleased with the suggestion, and we went to the dining-room, took all the things from the table, put in a new leaf, and rearranged everything before the party returned to the house. It is probably in allusion to this that she refers to me so pleasantly in her letter to the Queen of the 17th July, published in her correspondence.

Princess Alice was a noble woman, who has not been unduly extolled by her biographers. As a child she was frank and charming; as a woman, gracious and amiable. Her nervous force was weakened by her labours during the war, and by her family bereavement. The last time I saw her, at Windsor, she broke down completely, because my presence brought the loss of her father to her recollection. When I heard of the diphtheria in the ducal palace, I felt convinced that this noble woman would die.

In this year (1865) I paid another visit which was full of interest to me. The Queen was staying at Coburg, where she intended to be present at the State unveiling of a statue of the Prince Consort, who, as is well known, was a brother of the reigning Duke. Her Majesty directed the Duke of Edinburgh to write to me and command my presence, not only at that ceremonial but also at various receptions which were to take place during the week. The Queen resided at a small palace where there was not sufficient room for her suite, and the invited guests had to be distributed in different places. Lord Granville was the

Minister-in-waiting, and kindly offered me accommodation in a house which had been appropriated to him. When I waited on the Duke of Coburg he received me very graciously, as having taken part in the education of his heir and successor, the Duke of Edinburgh. It was a new experience to me to see Court ceremonials in one of the German Duchies. I never saw State functions better carried out, either in point of display or in excellence of taste. The inauguration of the statue was in itself a stately ceremonial, and it was made touching by the enthusiasm of the people, and by their love for their lost Prince. The Queen was obviously much touched by the sympathy shown to herself, and by the love displayed for the Prince Consort. The Princess Royal, and, indeed, almost every other member of the family, were present. I think it was here that I saw for the first time Prince Christian, who afterwards married Princess Helena. I mention this because in later years he has allowed me to co-operate with him in public work, and has extended to me many proofs of friendly interest, both in public work and in private correspondence.

I do not recollect anything else in the last two years of my life in Edinburgh that deserves special mention, except perhaps that I published a memoir 'On the Food of Man in relation to his Work.' There were views in this that have not been generally received, although they were in support of those entertained by my great master, Baron Liebig, in his work on Animal Physiology. But, independently of theoretical views, I gathered together and tabulated the experience of mankind in various countries of the world as to the amount of food required for man in different kinds of work, and these tables are now adopted as a basis in physiological works, both at home and abroad. In consequence of them Dr Pavy kindly dedicated to me his important work on food.

There were many men of interest in Edinburgh and its neighbourhood to whom I have made no allusion. I do not wish to forget one for whom I formed a strong affection, Dr John Brown, author of 'Rab and His

Friends,' and many delightful essays which are still popular among reading men. It was impossible to know John Brown without loving him. His marked individuality is in all he wrote. Who can read that prose poem of Rab, the dog, and his master, the carrier, without feeling the deep pathos of the author, and recognising his loving nature towards man and beast? John Brown was a frequent visitor at my house till ill-health parted him from his friends.

Another marked character who frequently came to Edinburgh to see me, and to whose residence in the country I occasionally went, was the old Marquis of Tweeddale. He was a man of varied experience, having been in the army under Wellington, and afterwards Governor of Madras. He was one of the first men to introduce the steam plough into agriculture, but paid the penalty of being before his time by losing money in his farming operations. He had a bright, active mind, and made his home at Yester agreeable to visitors. Several of his daughters were then unmarried, and were bright, intellectual women.

Who that knew Edinburgh at that period can forget Lady Ruthven and her beautiful old house near Edinburgh? The old lady was stone deaf, and could only be communicated with by writing on a slate. She was most hospitable, and had always pleasant people to stay at her house, in which was quite a museum of Grecian vases and other antiquities collected by her husband. Lady Ruthven possessed a monkey, which chattered and seemed able to converse with the deaf lady, who made suitable replies. Much as I liked this fine old lady, the process of writing one's thoughts on a slate was tedious. Her sister, Lady Belhaven, was on one occasion ill, and I desired to inquire how she was, but I found the same question, "How is Lady Belhaven?" already written twelve times on the slate, so I had to invent a more original observation!

On my leaving Edinburgh, the University passed a minute of appreciation of my services during my ten years'

residence in the city, and perhaps I may best conclude this chapter by inserting it.

Extract from the Minutes of the Senatus Academicus of the University of Edinburgh, dated November 6th, 1869.

The Senatus desire to record in their Minutes the high sense of the valuable services rendered to the University by their late colleague, Dr Lyon Playfair, who, by the able manner in which he conducted the work of his classes, by his earnestness in the advancement and in the practical application of science, by his admirable powers of organisation, by his efforts to obtain scholarships and endowments and to render the University more directly useful in guiding the general education of the people, and by his affable deportment, did much to promote the well-being of the University of Edinburgh.

This minute, and the conferring of an honorary degree of LL.D., brought my academic connection with the University of Edinburgh to a pleasant conclusion.

The editor may here not unfittingly subjoin another extract from the Minutes of the Senate of the University—that which was passed nearly thirty years later, at the time of Playfair's death.

Extract from the Minutes of the Senatus Academicus of the University of Edinburgh, of date 24th June, 1898.

The Senatus desire to put on record their sense of the loss which science, especially applied science, has sustained by the death of Lord Playfair. Lord Playfair was a member of the Senatus from 1858 till 1869, and not only discharged the duties of the Chair of Chemistry with great zeal and ability, but was of special service to the University in the organisation of the System of Degrees in Science. His influence and example did very much to extend and improve the practical teaching of science, and the Senatus recall with special admiration his success in creating a

teaching laboratory in the only rooms which the University could give him for the purpose, rooms altogether inadequate in extent and arrangements.

Although there now remain only two professors who were colleagues of Lord Playfair, every member of the Senatus knew him as an active helper of the University, and most as a personal friend.

He represented the Universities of Edinburgh and St. Andrews in Parliament for seventeen years, and was thus brought into constant contact with the Senatus. He had often to defend the interests of the University, which he did with ability and success, arising from his intimate knowledge of the affairs of the University and of the educational systems of Europe and America. The Senatus would especially refer to the important part which he took as Vice-President of the Privy Council in securing the rights of the University in the Medical Act of 1886.

The Senatus record their sense of personal loss, desire to express the sympathy they feel for Lady Playfair and the members of the family, and instruct the Senate to send copies of this minute to them.

(Signed) L. J. GRANT,
Sec. Sen. Acad.

Playfair's account of his life in Edinburgh as Professor of Chemistry by no means conveys to the reader an adequate idea of the work which he undertook, and the varied part he played, not only in university life, but in other spheres of usefulness. It may be doubted whether anyone holding a Scotch professorship has, either before or since the time of Playfair, united with the faithful discharge of his professorial duties so much hard work in connection with the public life of the country. The Professor of Chemistry at Edinburgh was, at the same time, the trusted adviser of Her Majesty's Ministers on questions of grave public importance, and the counsellor of the Queen and the Royal Family on matters in which they were personally interested.

One of the first public tasks assigned to Playfair after he took up his abode in Edinburgh was that of organising the Jury Department in the second International Exhibition—that of 1862. No greater tribute could have been paid to the success with which he had done his share of the work in connection with the Exhibition of 1851, than his appointment, with a free hand, to the responsible position which he undertook in connection with the Exhibition of 1862.

The following letter speaks for itself:—

Sir Francis Sandford to Playfair. LONDON, *February 1st*, 1862.

MY DEAR PLAYFAIR,—The Commissioners, at their meeting yesterday, desired me to write and request that you would undertake the superintendence of the Jury Department, with plenary powers. In the hope that you would be willing to do so, they further instructed me to forward copies of the original decision as to juries, the proof of the decisions which were drawn up when you were last in London, and the proof of the general paper of instructions for jurymen discussed at the same date. Neither of these last forms has yet been made public, and the object of this letter is to ask you to have the goodness to send me back either corrected in the form which you wish to be adopted as the final decisions in the matter. . . . In sending me your decisions, perhaps you will have the goodness to let me have a sketch of any circular letter which you would wish to go out with them to the foreign commissioners.

Believe me,

Yours very faithfully,

F. R. SANDFORD.

This letter makes it clear that Playfair received absolute powers and an unfettered discretion with regard to the composition and classification of the juries in the Exhibition of 1862. It is a striking proof of the exceptional position which he had made for himself that such powers

should have been conferred by the Government upon a Professor of Chemistry in the University of Edinburgh.

Reference has been made by Playfair himself to one portion of the duties which he undertook outside his professorial work whilst he resided in Edinburgh. This was the advice and assistance which he gave in connection with the education of the Prince of Wales, the Duke of Edinburgh, and other princes more or less nearly connected with our own Royal Family.

Playfair to Colonel Grey. EDINBURGH, *July 15th*, 1859.

DEAR COLONEL,—Since I received Sir Charles Phipps's letter, I have reflected on the best means of giving to the Prince of Wales such scientific instruction as he could best receive in the short time that he will be here, without demanding too much time from other objects of study. It appears to me that the best course would be to teach him through manufactures. There are several large objects of manufacturing industry upon which our prosperity as a nation to a great extent depends—especially those relating to iron and cotton. I would suggest that he should spend three hours weekly in my laboratory, studying the principles upon which these manufactures depend; and when he has mastered them theoretically and experimentally, that we should make one or two excursions to Glasgow to see works on a large scale with a view to his understanding their national importance, and the application of science to industry. Two days in Glasgow at different times would probably suffice. One day would be devoted to iron, both as regards its production and application to machinery; another day would be well spent on cotton, commencing with cotton-spinning and ending with calico-printing. The third great object-lesson, on textile fabrics, would be best learnt in Edinburgh, in the application of linen rags to paper-making. I would also suggest a similar lesson on coal, commencing with gas-works. You will readily understand that I select these staples of our industry as a means

of giving permanent scientific instruction, while at the same time information will be acquired of great importance to a Prince destined to fill such an important position in this country. Finally, I think it would gratify the Glasgow people much if the Prince visited their city as part of his educational course.

Playfair has told us in the preceding chapter of his Reminiscences of the success with which he carried out this programme for the instruction of the Prince of Wales in the practical application of science to industry. It was whilst the Prince was living in Edinburgh as Playfair's pupil that an incident occurred which has already, I believe, been published. The Prince and Playfair were standing near a cauldron containing lead which was boiling at white heat.

"Has your Royal Highness any faith in science?" said Playfair.

"Certainly," replied the Prince.

Playfair then carefully washed the Prince's hand with ammonia to get rid of any grease that might be on it.

"Will you now place your hand in this boiling metal, and ladle out a portion of it?" he said to his distinguished pupil.

"Do you tell me to do this?" asked the Prince.

"I do," replied Playfair. The Prince instantly put his hand into the cauldron, and ladled out some of the boiling lead without sustaining any injury. It is a well-known scientific fact that the human hand, if perfectly cleansed, may be placed uninjured in lead boiling at white heat, the moisture of the skin protecting it under these conditions from any injury. Should the lead be at a perceptibly lower temperature, the effect would, of course, be very different. It requires, however, courage of no common order for a novice to try such an experiment, even at the bidding of a man so distinguished in science as was Playfair.

One of the subjects that engaged Playfair's attention during his residence in Edinburgh was the erection of the Scottish Memorial to the Prince Consort. There were wide differences of opinion, both as to the character of the memorial and the site where it should be placed. Playfair, as a citizen of Edinburgh, naturally took a warm interest in the discussion. But it was as one of the personal friends of the Prince Consort, and as the adviser of the Queen, that he played the most prominent part in settling the questions at issue. The monument, as Scottish readers are aware, was finally placed on a site in Charlotte Square, but Playfair recommended a more commanding one between the old and new towns.

General Grey to Playfair. OSBORNE, *February 2nd*, 1863.

DEAR PLAYFAIR,—I have submitted your letter and the photographs to the Queen, and with the aid of the explanations which my knowledge of Edinburgh has enabled me to add, I think she has formed a very fair idea of the comparative merits of the two sites. She is much disposed to prefer that which you suggest; and without expressing any positive wish on the subject—which perhaps she ought not to do until more officially appealed to—Her Majesty is decidedly of opinion that it would be expedient to bring your suggestion more prominently forward. For myself, I have no hesitation whatever in saying that I think the site you propose is *infinitely* the best. I know the site well, and, independently of its connection with the two institutions dedicated to science and art, I cannot imagine a finer or more commanding position for a memorial to the Prince. But the platform or terrace on which it should stand, as well as the flight of steps leading up to it, should *really* be what you say—*magnificent*, and worthy of their object. . . . On such a site as you suggest, I think (if funds admitted of it), architecture would come in with great advantage to the assistance of sculpture.

I hope, if anything ever brings you south, you will let me have the chance of seeing you.

Ever yours most sincerely,

C. GREY.

Same to the same. WINDSOR CASTLE, *May 1st*, 1863.

MY DEAR PLAYFAIR,—I am left behind here in small health, in the hope of being well enough to go with the Queen a fortnight hence to Balmoral. The Queen would be very glad to see Mr Noel Paton's design for the Edinburgh Memorial, and also wishes to take the opportunity of speaking to you upon other matters; and Her Majesty desired me to say that if you can make it convenient to go down to Osborne any day in the beginning of next week, she would be glad to see you—probably Monday or Tuesday next. Perhaps you will write a line to Sir Charles Phipps to say when you may be expected. I am very sorry to miss you by not being there. . .

Believe me,

Yours very truly,

C. GREY.

At the beginning of 1864, Playfair was appointed by the Queen a member of the Committee charged with the duty of selecting the design and the site for the Scottish Memorial to the Prince Consort, and in that capacity he had a full share in deciding both the character of the Memorial and the spot where it was to be placed.

In 1865, the extra University work in which he took a part was of a more serious character than this discussion as to the site of the National Monument. He has referred briefly in his Reminiscences to the storm of opprobrium that raged around the Royal Commissioners who were appointed to consider the best means of dealing with the cattle plague which in 1865 caused such terrible injury to the graziers and cattle-breeders of the United Kingdom. He has not, however, laid emphasis upon the fact that he was the leading object of this feeling of anger.

This distinction he owed to the circumstance that it was by his advice more largely than that of any other man that the Commissioners were guided in arriving at their recommendations. His correspondence for that year with Lord Spencer, Lord Granville, Sir James Simpson, Mr Bence Jones, and many other persons of importance, shows to how large an extent his time and energies must have been absorbed in this work of fighting the cattle-plague. Great use was made in Parliament and elsewhere of his name and his opinions, both by the friends and the opponents of the Royal Commission. He himself stood sturdily to his guns, facing the storm without flinching, and affording proof that his remarkable tact in dealing with awkward questions and solving difficult problems was not inconsistent with a strong moral fibre and absolute fearlessness in facing the condemnation of the public when he felt convinced that he was in the right. Such work as that which was laid upon him in connection with this cattle-plague inquiry made a heavy demand upon his time and reserves of strength and energy. His only reward was his knowledge that, thanks to the final adoption of the course which he had suggested, the plague was stayed, and a great calamity averted.

I may close this chapter, dealing with Playfair's varied experiences during the years of his professorship at Edinburgh, with a reference to his journey on the Continent in 1865, when he had his pleasant meeting with Princess Alice at Kranichstein, and attended the inauguration of the Prince Consort's monument at Coburg. In a letter to the Queen, dated July 17th, Princess Alice says :—"Dr Lyon Playfair lunched with us yesterday; he is so charming." This was on the occasion recorded in the Reminiscences, when Playfair and the Princess relaid the dinner table in order to provide for an additional guest, who had been unexpectedly invited by the Prince.

CHAPTER IX.

IN PARLIAMENT.

Beginning a Political Career—Member for Edinburgh and St. Andrews Universities—Political Convictions—Appointed one of the Commissioners of the 1851 Exhibition. AUTOBIOGRAPHY: Liberal Member for a Conservative Constituency: Maiden Speech: Appointment of a Liberal Leader in the House of Commons: President of the Midland Institute: The Prince Consort's Superiority to Jealousy: Opposing the Cry of "Over-Education": Supporting a Bill for opening Trinity College, Dublin, to Roman Catholics: Attitude towards the Irish University Bill: Mr. Gladstone's Magnanimity: Appointed Postmaster-General: President of the Civil Service Commission: Opposing the Anti-Vivisectionists: Reforming the Scottish Universities. Playfair the Introducer of the Halfpenny Post-card—Reception of his Pamphlet on 'Teaching Universities and Examining Boards'—His Popularity at the Post Office—The Tichborne Case—The Election of Liberal Leader in the Commons—Averting a Disastrous Schism.

THE year 1868 witnessed another change in the position and occupations of Playfair. We have seen him as an active public official holding important offices under the State, and we have also seen him engaged in fulfilling the duties of the Professorship of Chemistry at Edinburgh. When he himself undertook that office in 1858, it was in the belief that the remainder of his days would be given to scientific work; but scarcely had he been settled in his chair at the University, when his services were called for by his country, and during the whole term of his residence in Edinburgh, he was subject to repeated demands for his assistance on matters of public importance. In 1868 he entered upon a new career. Doubly interested in everything that concerned the University, he was anxious in that year that the Reform Bill, which was then passing

through Parliament, should provide for the representation of the Scotch Universities, and he communicated with Mr Gladstone on this subject. In the end, his wishes with regard to this matter were gratified. The new Reform Bill provided two members for the Scotch Universities—one for the united Universities of Edinburgh and St. Andrews, and the other for the Universities of Glasgow and Aberdeen. It was suggested to Playfair that he should become a candidate for Edinburgh and St. Andrews, and after some hesitation he consented to this proposal.

In his Autobiography he explains some of the peculiar conditions of the constituency to which he had to appeal, and that for many years he continued to represent in the House of Commons. It was essentially a Conservative constituency, and it would certainly not have chosen Playfair as its representative if it had not been for his personal popularity with the constituents, and for the great value that was set upon his public services. Playfair himself was, as he had been throughout his public life, a convinced and confirmed Liberal; but he had learnt, as a member of the Civil Service, how to subordinate his own political opinions to the general welfare; and in entering Parliament as the representative of a University constituency, and that a constituency which was largely Conservative, he found that he was to some extent in the same position as that which he had held when in the Civil Service. He could hold his own opinions, and hold them as strongly as he pleased, but he could not become an active and open participator in the conflicts of parties. It followed that during the years when he sat in the House of Commons as member for the University of Edinburgh he was chiefly known to the House and to the world in connection with questions of social reform, and was but little involved in partisan controversies.

Yet, although he felt compelled by the peculiarity of the

position he held to refrain from using his opportunities as a member of Parliament to embark in merely partisan struggles, he was far too honest to conceal his opinions from his constituents or the world. The General Election of 1868 turned largely upon the question of the Irish Church. It was known that Mr Gladstone, if he secured a majority in the new Parliament, intended to propose the disestablishment of that Church. Playfair, in appealing to the electorate in the summer of 1868, did not conceal the fact that in this respect he was a warm supporter of Mr Gladstone's policy. The declaration brought down upon his head many remonstrances from influential members of the University, and caused him to lose a large number of votes. It may be well to quote one of the letters which he received at this time, as it will suffice to clear away any doubt that may have existed as to the character in which he made his first appeal to the constituency for election to the House of Commons.

27, INVERLEITH ROW, EDINBURGH,

Professor Balfour to Playfair. *June 23rd*, 1868.

MY DEAR PLAYFAIR,—I was not a little annoyed to find by your manifesto that you advocated the disestablishment of the Irish Church. That, with me, is a vital question, and I do not feel that I can conscientiously support anyone who espouses this view. It is one of my great objections to Gladstone. I believe that the measure involves virtually the national ignoring of Protestantism in Ireland, and that it will lead to the worst consequences not only there but in Britain. You say that it will advance Protestantism. The Roman Catholics do not think so, and they are far wiser than any of our rulers. They support the measure because it will certainly lead to the advance of Romanism. I regret much that you have become so thoroughly Gladstonian, and that you are supporting Gladstone as Chancellor. You know that he has no good feeling towards our University, and that he

has done nothing for us. . . . I have been a Whig all my life, and I am so still, but I think that University interests are above mere party politics, and I therefore leave party, and support a man as member from whom I differ politically. In all the circumstances of the case, I must withdraw my pledge to vote for you, and must leave myself free to adopt any plan of voting I may think best fitted to advance the cause of the University and of Protestantism.

Yours truly,

J. W. BALFOUR.

It is only fair to Playfair to publish this specimen of the letters which he received at the time of his candidature for the University. In his Reminiscences he explains to how large an extent he stood aside from party politics in the House of Commons; but, in justice to him, it must be noted that he not only gained his seat as an avowed Gladstonian, but faced the loss of a large number of his supporters when doing so. When the election took place, his opponent being Professor Campbell Swinton, Playfair was returned by a majority of 260 votes.

The Parliament elected in 1868 was the first which had been returned under the Household Suffrage Act. It gave the Liberal party the support of a large majority in the House of Commons, and Mr Gladstone took office as Prime Minister at the head of an Administration that was destined to leave an indelible mark upon the history and institutions of the country. Very soon after the new Government had been installed in office, Playfair received, through Lord Granville, an appointment which was very gratifying to him. In June, 1869, he became one of the Commissioners for the Great Exhibition of 1851. It was a post which he had certainly earned by his services to that Exhibition and to the Commissioners in earlier days, and his return to a close connection with the work of the Commissioners restored him to a field of labour which he

had made, in a sense, peculiarly his own. A new Member of Parliament is not, as a rule, a man of much importance. He has to serve an apprenticeship usually of more than seven years' duration before he really begins to make his mark among his fellow-members. But Playfair entered the House of Commons in 1868 with so great a reputation, both as a man of science and a public servant, that from the first he took a position very different from that of the ordinary new Member. What that position was may be gathered from the fact that barely two years after he entered Parliament it was generally reported that he had been offered the post of Vice-President of the Council. The report, as it happened, was untrue, but the mere fact that it should have been circulated, and should have been believed by many of his friends, affords striking testimony to the place which he had secured in the public esteem.

I must now leave Playfair himself to resume the thread of his narrative.

AUTOBIOGRAPHY CONTINUED.—VIII.

1868 to 1877.

IN the year 1868 the Conservative Government passed the Representation of the People Act, and considerably extended the area of representation. During the passing of that Act, the Scotch Universities made considerable efforts to have representation extended to them in the same manner as it has long been enjoyed by the Universities of England. Professor Campbell Swinton, a leading Conservative in Scotland, went up to London to urge these claims upon the Government, and I accompanied him in order to act upon Mr Gladstone and the Liberal party. Our efforts were successful to the extent of obtaining two Members for the four Scotch Universities. Edinburgh and St. Andrews Universities received one

Member, a similar representation being given to Glasgow and Aberdeen.

The elections took place at the end of the year. The constituency of the Universities is the General Council of graduates in each University. In the case of Edinburgh and St. Andrews it amounts to about 5,000. Almost all the graduates are men engaged in professions, chiefly ministers, lawyers, doctors, and schoolmasters. They are scattered in every town in the United Kingdom, and form a constituency difficult to canvass and necessarily costly, as it involves a large amount of correspondence as well as of agency. The two candidates for the first representation were Professor Campbell Swinton and myself. Each of us was assisted by committees in all the large towns, as well as by central committees in Edinburgh. After a severe contest, conducted, however, with good humour, I was elected as the first University representative by a majority of about 250. I resigned my chair at the University, and returned to London for permanent residence.

It is always wise for new members to take little part in the House of Commons till they understand its habits and modes of work. I therefore occupied myself for the first year in acquiring this knowledge, and in serving on committees. My position was peculiar. All University seats are Conservative. I was, in fact, an advanced Liberal representing a Tory seat. I had won it chiefly from two causes: first because my public work had made me better known to the constituents in England and Ireland than my learned opponent, who was much esteemed in Scotland. The second point in my favour was that I always had large classes, and between my former pupils and myself there was a strong bond of attachment. After graduation, my former pupils still supported their professor, regardless of politics. The second was perhaps the chief cause of my success, as I learned more distinctly in after years, for although I continued to represent the University in Parliament for seventeen years, in each successive contest my majorities lessened, because a new race of graduates arose "who knew not Joseph," and the Conservative character of

the constituency began to assert itself. All through my University representation the fact that I was a member for a Tory constituency weighed upon me. I could not take an active part in party politics, and was obliged to limit myself to neutral subjects connected with science, education, public health, and social welfare.

My first speech in the House of Commons (1869) was upon the abolition of religious tests in the English Universities. Tests had long been abolished in Scotland, but in England the places of honour and emolument in the Universities could only be obtained by members of the English Church. My speech was a distinct success, and was well received by both sides of the House. Speaker Denison sent for me to offer his congratulations, and several of the leaders on the Conservative side were generous enough to cross over, not to express approval of my views, but to tell me that I had secured the ear of the House for the future.

In 1870 I urged the adoption of the system of open halfpenny letters, now known as post-cards, and the idea commended itself to Lord Hartington, who was then Postmaster-General, and was quickly accepted by the Post Office. In this year W. E. Forster introduced his great measure for a national system of education in England, and upon such a subject I was bound to take an active part. Forster much appreciated my aid in passing his Bill, and we remained warm friends to the end of his life. Forster was a tall man of marked features, and rather blunt in manner, though he really possessed a tender and affectionate nature. His speeches in the House were courteous to friends as well as to opponents; but his blunt talk in the lobby sometimes gave offence. When his peculiarities were understood, it was impossible not to love and admire him.

> "Oh! honest, stalwart man, whose earnest face
> Mirrored the soul within, whose every deed
> Made answer to thy word; who gav'st no heed
> To foolish babble or the lust of place."

His Education Act offended the Nonconformists, and did not satisfy the denominationalists. The dislike of the

former prevented him being elected leader of the Liberal party in 1874, when Gladstone suddenly threw down the *bâton* of leader. At that emergency I was asked by Lord Granville to sound the Liberal party as to whether Lord Hartington or Forster should become leader. The post brought letters daily showing an equal division of the party, although with this difference, that the Nonconformists were bitter against Forster, while the supporters of the latter were simply indifferent as to Lord Hartington. After a long consultation at Lord Granville's house we determined to support the latter, and I drove down to Eccleston Square to see Forster, who was then ill, in order to ask him to withdraw his claim. He furnished me with a letter to this effect, which was immediately sent to the evening papers—just in time, for Hartington, with his usual modesty, desired that afternoon to withdraw in favour of Forster.

Outside the House, the year 1870 was one of considerable activity. Birmingham had founded "The Midland Institute," at the birth of which I aided, when the foundation stone was laid by the Prince Consort. The Midland Institute was in the habit of changing its presidents annually in order to obtain new addresses, and in this year, Charles Dickens having died during his period of office, I was elected to be his successor. The title of my address was the "Inosculation of the Arts and Sciences." In a busy manufacturing town like Birmingham it was important to show the mutual dependence of both, for just as two arteries inosculate and pour their contents the one into the other, so do the arts and sciences, to their mutual nourishment. The audience at Birmingham filled every part of the great Town Hall, and seemed to be pleased with the subject, and I hope with the exposition. A few days earlier I had given at Newcastle an address "On National Education," in my capacity as President of the Educational Section of the Social Science Association. Both these addresses are published in the volume 'Subjects of Social Welfare.'

I have stated that the Midland Institute was inaugurated

by the Prince Consort, who then gave one of those broad, comprehensive speeches which were beginning to attract the attention of the public to his great capacity. I may mention an incident in regard to this speech which will show how superior he was to petty jealousy. As one of his suite I had handed a copy of the speech to the reporters. An obscure literary journal, long since dead, wrote a series of articles in which it pointed out some fancied resemblances in my printed lectures to the speeches of the Prince Consort, contending that I was the author of the latter also. The journal was so obscure that I hoped it would not attract the observation of the Prince. On the next occasion when it was again necessary for the Prince Consort to make an important speech, he sent for me as usual to hear him read it, and to ask for my criticism, which I always gave in a frank manner. This time I said that I had no criticism to offer. The Prince laughed and said significantly—"I am glad that you like it, because it may bring *you* credit!"

In 1871 the educational subjects for discussion in the House of Commons were numerous. The Endowed Schools Act of 1869 was operating too well to please the Church and the Tories, so assaults were made upon it. The old fear cropped up that there was to be "over-education" of the people. Cardinal Cullen vehemently opposed the high character of popular education. In evidence before a Royal Commission on Irish Education he used these words:—

"Too high an education will make the poor oftentimes discontented, and will unsuit them from following the plough, or from using the spade, or from hammering iron or building walls."

His Eminence, therefore, strongly objected to having higher subjects than reading, writing, and arithmetic taught in schools, in order, as he expounded it, "to cultivate the talent of a miserable minority." I took the occasion of one of these discussions to defend the opposite view. No nation had ever too much of an intellectual fund, and it is the highest duty of all public schools, whether elementary

or secondary, to find out youth of talent, and to develop such talent by higher instruction. As Sir John Lubbock and I have had to fight for this view continually in the House, I may quote the last sentence of a speech delivered by me on July 21st, 1871 :—

"If the educational endowments of this country were not to be freely opened 'to the miserable minority' of the talented poor, let them give in the elementary schools such instruction as would enable the pupils to know what was the object and purpose of the elements there taught, so that they might not fling away these elements like their worn-out boyish small clothes as soon as they began to win their daily bread, but that they might use the knowledge acquired in school to further their advancement as intelligent beings in whatever position and occupation they might be placed" ('Hansard's Debates,' ccviii., p. 128).

This view I have steadily maintained in after years, and as chairman of an important Select Committee on Endowed Schools in the years 1886-7, I had the satisfaction to see that the promotion, not only of secondary but also of technical education, received the distinct recognition of the House of Commons. The conditions of industrial and commercial competition with foreign countries have awakened the public mind to the truth that the competition of industry has now ceased to depend on the possession of cheap raw materials or other local advantages, but has become actually one of intellect among the producers of this kingdom and of foreign nations.

About this time I became intimately associated with Professor Fawcett, who was totally blind, but did not allow this disability to interfere with his work. Fawcett was admired by all his political colleagues for the activity of his intellect and his unswerving integrity. He brought in a Bill for opening up Trinity College, Dublin, to Roman Catholics, and I gave him hearty support. The following extract from his speech in introducing the Bill shows how much he appreciated my co-operation :—

"If, turning to this side of the House, Liberal members were appealed to, and asked to name the man who, from his University experience, from his great ability, from his position in this House, from his representing a University constituency, is best qualified to

deal with this subject of University Education, should we not all, in a candid moment, say it was the hon. member for the University of Edinburgh (Dr Lyon Playfair) ? "

The Bill introduced by Fawcett was supported by the authorities of Trinity College, who had always encouraged the attendance of Roman Catholic students, although they had no powers to admit them to fellowships or professorships. The Bill was eminently reasonable, but it was opposed by Gladstone as likely to interfere with a larger scheme of University Education for Ireland which he then had in contemplation. Fawcett and I knew nothing of his views at this time. Had Gladstone frankly taken us into his counsels our action would probably have been different, and the subsequent difficulties of the Government would have been avoided. The Bill for the reform of Trinity College was well received by the House, which passed its second reading by a majority of 73. Its success seemed to be assured; but on the morning of April 25th, 1872, when it was to go into the Committee stage, all the Liberal newspapers received notice that a Parliamentary crisis was imminent, because the Ministry would resign and dissolve Parliament if the Bill were prosecuted to its subsequent stages. An extract from my speech on that day will show the surprise of the promoters of the Bill :—

" We suddenly find our little Bill, which we thought to be a star of the sixth magnitude, blazing up into a fierce sun which was scorching friends and foes alike. . . . That is a turn of the Ministerial screw that can only be made very rarely and carefully without the Ministerial machine going to pieces " ('Hansard's Debates,' ccx. p. 1824).

Our majority melted away under the threat of dissolution.

During the autumn of this year, I published an elaborate pamphlet under the title of 'Teaching Universities and Examining Boards,' in order to defeat the intention of the Government to introduce a Bill for the reform of Irish Universities upon the type of the University of London, which is a mere examining Board. This pamphlet excited much notice, and rapidly went through several editions.

I was informed by members of the Cabinet that when Gladstone prepared his draft Bill of 1873, he circulated with it a copy of my pamphlet to each of the Ministers, so that they might judge whether he had met my objections to a mere examining system. At last the Government Bill was introduced. It was carefully prepared, and worthy of the great talents of its author, except in a few important points. It tried to conciliate the priests by excluding mental philosophy and modern history from the new University, and it abolished Galway College by throwing it as a sop to the Clerical party. I attacked the Bill on several grounds, among which was the abolition of one of the Queen's Colleges. In this I was supported by the fact that 131 out of the 141 students of Galway College, both Protestants and Catholics, memorialised me to be their advocate; while at the same time all the students of the Roman Catholic University of Dublin desired me to represent their view that philosophy and history should not be excluded from the curriculum of their studies. While the Roman Catholics thus showed their confidence in my educational views, the stronghold of Protestantism, Trinity College, Dublin, published a special edition of my pamphlet, and circulated it extensively. Gladstone, seeing that I had much moral support behind me, was anxious to secure my adhesion to his Bill, and in the course of the debate put up Cardwell to state that my objections "were not of the essence of the Bill, and would be conceded in Committee." Accordingly I voted for the Second Reading. For this I was much blamed by the Press at the time, but I think that I was right not to help to throw out a Liberal for a Conservative Government when the former consented to adopt my views at a later stage. I strongly objected to the exclusion of philosophy and history from the University, as the following passage from my speech will show:—

"This Bill limits, if it does not exclude, metaphysical and ethical subjects, and thus forces the student to be one of two things—either a bigot or an infidel. I object to this exclusion of subjects, to this tongue-tying of professors, and to the encouragement of academic dissent on the part of the students; and I do so because science,

whether mental or natural, can only breathe and flourish in an atmosphere of liberty. Science must grow in the light which comes direct from the Creator; it is dwarfed and dies if the light be intercepted by a Church, and thus be feebly reflected upon it . . . The Bill has been framed with a view to conciliate the Ultramontane party. It has failed to do this, and it has not satisfied the Liberal Catholics of Ireland. Ultramontanism always appears to me to be ecclesiastical communism. Communism is the reduction of property to a common level, and Ultramontanism is the reduction of religious spirit and intellectual thought to a common level."

Count Bismarck seems to have hit on the same idea, for in a speech at a date subsequent to this he speaks of Ultramontanist priests as being "black-robed communists."

Dean Stanley accepted my definition, and headed a pamphlet, 'Ultramontanism is Ecclesiastical Communism.'

Robert Lowe (now Lord Sherbrooke) was put up to answer my speech. Lowe's speeches were always full of pungency and close reasoning when they were carefully prepared. He had given ample pains to demolish my arguments, but he thought that the speech would be a repetition of my pamphlet, and I had carefully avoided that line of argument. Mr Lowe made a good speech, but it was no answer to mine. It was very different in the case of Mr Gladstone's closing speech a few days later. He devoted himself with all his power and eloquence to upset my arguments. I had gone up into the gallery to hear him better; and, not seeing me in my place, his keen eye quickly detected me in the gallery, and he addressed his speech to me in my lofty perch—the only time that I have ever seen this done. I happened to be sitting not far from the Prince of Wales, and His Royal Highness sent sympathetic smiles to console me in my demolition!

The Bill was defeated by a majority of three, and the Government resigned, although they came in again on the failure of Disraeli to form a Government.

All my friends assured me that I had made an irreconcilable enemy of our great Liberal chief, who largely attributed his defeat to my speech. How unjust this was to his generosity is shown by the fact that in the autumn of that year he asked me to join his Government as Post-

master-General. It is true that, in the interview preceding my acceptance, he intimated a doubt as to whether I could run in harness, as I was apt to form strong views of my own. This was the only allusion he ever made to my two years of opposition to his University measures for Ireland.

On accepting the office of Postmaster-General, I went to Windsor with Sir W. Harcourt, Sir Henry James, and others, to kiss hands on appointment, and to be sworn a Privy Councillor. The Queen was very gracious on this occasion. After I had taken the oath as Privy Councillor, she made a remark showing how constantly the memory of the Prince Consort is in her thoughts. It was, "How much *he* would have been pleased!" No need to tell me who *he* was. The Queen commanded me to return on a visit, and to dine with her that evening.

The administration of the Post Office was of a character entirely to my liking, and I had been just sufficiently long in the saddle to feel that I could propose some important reforms, when, early in 1874, without the least notice, Parliament was dissolved, and Gladstone's Government came to an end, because the country returned a Conservative Parliament.

I now hoped for some leisure, as the Tories were in power. But the month after the meeting of the new Parliament an appeal was made to me by Mr Disraeli's Government. The increasing cost and decreasing efficiency of the Civil Service of the country were causing considerable anxiety. The Government had resolved upon issuing a Commission to consider whether it should be reorganised on a better system, and determined, although I was in opposition to them, to ask me to preside over the inquiry. I was naturally unwilling to undertake such heavy work, but the Chancellor of the Exchequer, Sir Stafford Northcote, represented that he had aided the Liberal Government by going to America on the Alabama claims, and the Conservatives thought that this established a title for Liberal aid. This was a fair way of putting the case, so I consented. The inquiry was a wide one, and likely to be prolonged. The subjects referred were :—

1. The method of selecting Civil Servants in the first instance.
2. The principles upon which men should be transferred from office to office, especially when redundant.
3. The possibility of grading the Civil Service, as a whole, so as to obviate the inconveniences which result from the difference of pay in different departments.
4. The system of employing writers for duties of a subordinate or temporary character.

The Commission was dated April 25th, 1874, and our first Report was issued in January, 1875. It established a completely new system, which since then has received the official title of the "Playfair Scheme." This title implies too much personality to the President. The Commission consisted of the most eminent permanent officers of the Civil Service—Sir R. Stephenson, Sir Francis Sandford, Sir T. Farrer, The Hon. C. Fremantle, Sir R. Hamilton, Mr Walrond, Mr Joyce, and Lord Claud Hamilton. The essence of the "Playfair Scheme" was to divide the Civil Service into two branches, one of which was to consist of men who passed a high competitive examination for the purpose of doing work requiring intellectual ability, and the other of mere clerks who could do routine work of an inferior order. In both divisions, however, merit, and not mere seniority, was to be the condition of promotion. The scheme was received with much hostile criticism, which fell naturally on the supposed author, and gave to me a large amount of temporary unpopularity. As its effect was a large economy in the estimates, it gradually became popular. But the writers and inferior clerks never ceased to attack it, and in this year (1886) a new Royal Commission was appointed to report upon its working. The Government asked me to act upon this Commission, but I declined, as I am at the present moment a member of three other Commissions, which I thought quite sufficient to engage my attention. Whether the "Playfair Scheme" will survive this ordeal I do not yet know.

the accomplishment of which he had a share, was the foundation of the Chair of Geology in the University, by the liberality of Sir Roderick Murchison.

Sir Roderick Murchison to Playfair.

FOLKESTONE,
November 27th, 1870.

MY DEAR PLAYFAIR,—Your letter of the 24th inst., anent the *desideratum* of a Geological Chair in the University of Edinburgh, came to me at the same moment as one from Geikie on the same subject, which I enclose. The reasons you both employ are so precisely what I feel myself (and have felt for a long time), that I have resolved to do now what would have come forth on my death, as settled by my will, in which I leave £6,000 to the University of Edinburgh to found, or aid in founding, a Geological Chair, certain conditions being complied with. In the present state of science, it is quite absurd to unite geology with natural history in the same professorship. I confess that it would be highly gratifying to me to have my name connected with this new Chair (as Geikie puts it); for I do not think—without vanity—that any living man has worked harder in developing the true geological structure of Scotland than myself. Geikie ought certainly to be the first professor to succeed Jameson. As the M.P. for Edinburgh, you must induce the Government to help, which, as I understand you, they are ready to do. I am here getting braced up for the Liverpool meeting, and writing out my address to the Geological section.

Ever yours sincerely,

RODERICK MURCHISON.

Playfair has mentioned in the preceding chapter of his Reminiscences his early Parliamentary connection with Post Office reform. He was, in fact, the leader in the movement for the introduction of the halfpenny post-card into this country.

Lord Hartington to Playfair. POST OFFICE, *May 26th*, 1870.

MY DEAR SIR,—I am glad to be able to inform you that the Government have decided to introduce a half-penny card postage, as advocated by you and a deputation of Members of Parliament with whom I had the pleasure of an interview some time ago. I had intended to announce this yesterday in introducing the Post Office Bill, but it was too late for me to be able to make any statement. I should be much obliged to you if you would, by putting a question to me either to-day or to-morrow, enable me to inform the House of our intention.

Yours faithfully,

HARTINGTON.

Reference was made by Playfair in his Reminiscences to his pamphlet published under the title of 'Teaching Universities and Examining Boards.' Its publication brought him many expressions of gratitude and goodwill from different quarters. Only two of them need be quoted.

The Hon. David Plunket to Playfair. DUBLIN, *February 1st*, 1872.

MY DEAR PLAYFAIR,—Many thanks for the copy of your address which you were good enough to send to me. I have read it with the greatest interest. I think you have completely demolished Lowe's Halifax speech, so far as it dealt with the Universities question; and have, besides, made a case on the other side that he, and those who would gladly take his views, for the present will find it hard to dispose of. Allow me to thank you warmly, on behalf of those whom I represent, for the yeoman service you have done for our cause. There is an abstract of your address in to-day's 'Daily Express,' our chief Dublin Conservative newspaper, and I doubt not that it will appear in some of the others later; but, unfortunately, Lady Spencer held her first drawing-room last night, and so the space of our Dublin local press was very much

occupied with lists of ladies who were presented, and of the dresses they wore. So there was no room for more weighty matters.

Yours very truly,

D. PLUNKET.

Professor Blackie to Playfair.

EDINBURGH,
February 3rd, 1870.

MY DEAR M.P.,—I return you my most sincere thanks for your lecture, which shall be treasured up amongst my cherished valuables. The French testimonies are of the utmost consequence in the question, and were new to me. Bob Lowe is a "Philister," and must be suppressed, only in a polite way, as you did. Bain, Grote and Co. taught a very low moral philosophy, such as may suit a nation of shopkeepers, the modern Carthaginians that can never produce any noble result. A man ought to feel truth like a well of living waters growing up out of his soul, not merely gather it with his fingers. I shall send you my manifesto in a few days. I intend to send copies to some of our most notable M.P.'s, though I have no doubt the majority of them are Carthaginians, believing mainly in supply and demand. I lecture in London on Friday the 26th, at Albemarle Street, on which occasion I hope to see you and other friends.

Ever yours,

JOHN S. BLACKIE.

Playfair's appointment as Postmaster-General in 1873 came as a surprise to himself as well as to his friends. After less than five years of Parliamentary life he was promoted to one of the greatest offices in the Ministry outside the limits of the Cabinet. But for the unfortunate break which occurred in his official life by the defeat of Mr Gladstone's Government less than three months after he received his appointment, it is probable that Playfair would have advanced steadily to a front rank in political life. It was in this manner that he had advanced in every other branch of labour that he had followed. But his loss of

THE RIGHT HON. SIR LYON PLAYFAIR.
(1888)

STANFORD LIBRARY

Photo, Elliott & Fry, Baker St., W.

STANFORD LIBRARY

office almost before he had taken full possession of his post gave to this first appointment of his something of the character of a false start. His political career, which had been begun under auspices so favourable, was not destined to enjoy the brilliant success which had attended his labours in other fields. For this fact different reasons may be alleged. Undoubtedly, his detachment from party politics had something to do with his failure to secure that recognition in Parliament which he had obtained outside. Something, too, must be attributed to the circumstances which attended his term of office as Chairman of Committees—an episode in his career which will be fully dealt with later on. But the first check, and, I believe, the most serious, to his Parliamentary advancement, was the fact that, having secured, at an unusually early date in his life as a Member of the House of Commons, one of the most important posts in the Administration, he was, through no fault of his own, removed from that office almost immediately after he had obtained it. Nevertheless, short as was his tenure of office as Postmaster-General, it enabled him to win the confidence of the eminent public servants with whom he was brought in contact at St. Martin's-le-Grand.

In the early seventies one of the subjects which created the greatest interest in the public mind was the trial of the famous cause raised by the fraudulent "Sir Roger Tichborne" against the rightful owner of the Tichborne estates. The question of the identity of the Claimant was one that, for a season, excited greater interest in all classes of society than any problem in politics. The nation was for a time ranged into the friends and the opponents of the ingenious knave who had so successfully imposed himself upon many honest persons, and the exposure of whose fraudulent claims was the greatest triumph won by the late Lord Coleridge during his brilliant career at the bar.

Science came to the aid of truth and justice in this as it has done in many more important matters; and Playfair, as a man of science, made a suggestion to Sir John Coleridge which might have been of use if the other evidence against the pretensions of the Claimant had not been so overwhelming. This was in respect to a slight malformation of the ear of the genuine Roger Tichborne, the lobe of that organ having been attached to his head instead of being pendant as in most cases.

Sir J. D. Coleridge to Playfair.

OTTERY ST. MARY,
August 6th, 1871.

MY DEAR DR PLAYFAIR,—Many thanks for your kind and interesting letter. It is not the first I have heard of this curious fact. Indeed, some gentleman, whose name I cannot read, and who has not dated his letter, so that no doubt he thinks me a most uncourteous man for not answering, has sent me a couple of the photographs, with the measurements, and most careful remarks on this very point. I will not forget it, you may depend upon it; and I will ask you some day to give me Professor Laycock's address, that, if necessary, we might call him. . . .

Yours very sincerely,

J. D. COLERIDGE.

There have been few episodes of greater interest in the history of the Liberal party than the election of a successor to Mr Gladstone as leader in 1875. Playfair has briefly related the facts of the case, and has indicated with equal terseness the part which he played in connection with the crisis. In this, as in many other cases, the simple and direct language of his Reminiscences may suggest to those who are ignorant of the facts an assumption on his part of greater activity and a more potent influence than he really possessed. No idea could possibly be more unjust to Playfair. The correspondence in his biographer's possession, and knowledge acquired from other quarters, con-

clusively establish the fact that when Playfair—writing, be it remembered, for his family rather than for the public—states in his Reminiscences that he took a certain part in some public transaction, he invariably understates rather than overstates the share which he had in it. The question of the election of Mr Gladstone's successor in 1875 is a case in point, and the interest which attaches to that curious episode in the history of the Liberal party justifies an amplification of the story that Playfair has told so briefly. From the biographer's point of view such an amplification is specially justifiable, because it throws light upon the position which Playfair had secured in the inner councils of his party, and shows that here, as elsewhere, he had become a moving spirit "behind the scenes."

Mr Gladstone's announcement of his determination to retire from the leadership, and from active participation in political life, at once let loose many passions which had been simmering beneath the surface of the party. By common consent, the man who, next to Mr Gladstone, had shown the greatest capacity for leadership among the occupants of the front bench in the House of Commons was Mr Forster. But the very success which Mr Forster had secured as an administrator and statesman had raised up against him powerful enemies on his own side of the House. His Education Act, which was, after all, the greatest of all the measures passed by the Government of 1868, had aroused against him the passionate anger of a large section of the Nonconformists and of the members of the well-known Birmingham Education League. He had been sneered at as a trimmer; he had even been denounced as a traitor. To those who really knew Forster these charges seemed to be too contemptible to call for refutation. No one who had been brought into close contact with him had failed to recognise that honesty of purpose and strength of conviction which won for him

the admiration of Playfair. But jealousy and calumny are, unfortunately, among the most formidable of all the weapons used in political warfare, and Forster had exposed himself to both. Playfair, like most men who were not moved by the passions of a clique, recognised in Forster the proper successor to Mr Gladstone. But no sooner was the name of the author of the Education Act mentioned in this connection than a series of desperate intrigues were set on foot against him. The representatives of the Birmingham League, having no one in their own party whom they could set up in opposition to Forster, were shrewd enough to nominate a man who was not in special sympathy with their views, and who, in addition to high rank, great social influence, and more than considerable abilities, possessed the valuable qualification of being positively obnoxious to no section in the party. Lord Hartington himself, it need scarcely be said, had no share in the intrigues which were carried on against Forster. He was as innocent as Forster himself of seeking to obtain a post which, if one of high honour, was at the same time one of great difficulty. But those who supported him were ardent and not over-scrupulous, and they were inspired by many different motives. If some of them desired Lord Hartington rather than Mr Forster because they honestly believed that the latter was not sound in his Liberalism, there were others who saw in Lord Hartington one conspicuous merit. This was the fact that he was the heir to a peerage, and that consequently in the course of nature he must before very long be removed to the House of Lords, thus leaving the leadership in the Commons open to some younger man, for whom the prize was not yet ripe. The result was that, although at the beginning of the struggle Lord Hartington's supporters were in a distinct minority, as time passed they gathered recruits, and it became increasingly apparent

that Forster's election might lead to a dangerous schism in the party. With this preamble, I may leave the correspondence which Playfair received to speak for itself. It is, perhaps, superfluous to remind the reader that Lord Granville, by Mr Gladstone's retirement, had become the leader of the party as a whole.

Earl Granville to Playfair.

SAVERNAKE FOREST, MARLBOROUGH,
January 16th, 1875.

MY DEAR PLAYFAIR,—I have received your letter of the 15th. Pray assure Mr Fawcett, and the other independent members to whom you allude, that I am aware of no intention or wish to nominate any leader of the House of Commons without consultation of the whole body of the Liberal party.

The efforts of the meeting held at my house on the 14th were concentrated on the attempt to prevent Gladstone's resignation, and no allusion was made to the future, farther than a general agreement to the effect that, if the decision was final, it was better to publish it without delay, in order to give the Liberal party time to consider their position before the meeting of Parliament.

I am not authorised to speak for Lord Hartington, but I know no one more impressed with the difficulty of any one taking Mr Gladstone's place. I cannot answer for his acceptance if the choice were made of him, but I am certain that he would refuse unless the proposal was made with the hearty concurrence of the party.

I cannot take upon myself to summon a meeting, but I have written to Adam (the chief Liberal Whip) to say that I presume if he receives a requisition to that effect from a few of the leading independent members he will act upon it.

Yours sincerely,

GRANVILLE.

P.S. Confidential.—I suppose that what Fawcett is afraid of is rather Granby, Herries, and Dizzy than G. Bentinck and Dizzy. For George Bentinck, with all his

inferiority in ability, had a will of iron. I believe that I have given a perfectly accurate statement of Hartington's feelings, and that he would require a full assurance, not only of the support of his late colleagues in and out of the Cabinet, but of such leading and honourable men as Fawcett, to induce him to undertake a task the inherent difficulty of which will be immensely increased by ——'s restless ambition. Pray show Adam our correspondence. I have written shortly to him.

Lord Wolverton[1] *to Playfair.*

12, CARLTON HOUSE TERRACE,
January 18th, 1875.

DEAR PLAYFAIR,—Thanks for the enclosed. If Adam calls the meeting, which I think with Granville he should do if he has a requisition, no time should be lost, and I think it should not be later than the Wednesday in the week after next. The notice of the meeting will help to the solution of the question as to who is "the favourite." It seems very dark now, and difficult for anyone to form an accurate opinion. I hardly think Lord Granville could act as chairman. Could Bright? I think he might if he would undertake it.

As a matter of fact the meeting was called by Mr Adam in the manner suggested by Lord Granville, and Mr Bright presided over it.

(Confidential.)

Earl Granville to Playfair.

BOWOOD, CALNE, WILTS.,
January 19th, 1875.

MY DEAR PLAYFAIR,—I have received your two notes of yesterday. I shall consider the second as absolutely personal and confidential. Your letter of Friday had made me think you were in favour of Hartington. I have perfect confidence in both him and Forster; but our late chief would, I think, be more cordial in support of the former, which is an element not to be put out of sight, as also the acquiescence of all his Cabinet colleagues in

[1] Lord Wolverton, as Mr Glyn, had been Mr Adam's predecessor as chief Liberal Whip.

Hartington last year. But at that time Forster was supposed to be intolerable to the Nonconformists. . . .

Yours, G.

Mr Fawcett to Playfair.

BROOKSIDE, CAMBRIDGE,
January 20th, 1875.

MY DEAR PLAYFAIR,—I think the general tone of the Press is very encouraging, and it is certainly very hopeful that 'The Times' has not yet pronounced in favour of Hartington. I believe the Nonconformists are to have a conference at Crewe to-day, and the Birmingham League, I see, meets to-morrow to consider the leadership. I expect they will praise Gladstone at Forster's expense, but certainly all Forster's colleagues in the Cabinet were responsible with him for the parts of the Education Act which gave offence to the Nonconformists. If they put forward a claim to have a leader who is in favour of Disestablishment, it may be fairly replied that only a minority of the Liberal party in the House—not more than one-third—supports Disestablishment, and, until a majority of the party supports it, it is unreasonable to expect the leader to do so. On the other hand, the great majority of the party voted last session in favour of the extension of County Franchise, and therefore we may fairly claim that we should have a leader who will go with the majority on this question. Hartington, you will remember, walked out of the House, whereas Forster not only voted but spoke in favour of Trevelyan's Bill. It will, of course, be very important to arrange beforehand that at the meeting Forster should be proposed by some very influential member of the party. My sole motive in saying last week that, if no one else proposed him, I would, was that I thought it would show we were in earnest. . . .

Yours very truly,

HENRY FAWCETT.

Same to the same.

CAMBRIDGE, *January 23rd*, 1875.

MY DEAR PLAYFAIR,—Many thanks for your letter. From all that I hear, and I have made very careful inquiries, I take a much more hopeful view of Forster's

chances than you do. The hostile attitude of the Nonconformists is already beginning to produce a strong reaction in his favour, and I believe this feeling will grow. Of one thing I feel certain, that nothing that could possibly happen would be so disastrous to the future of the party as if Forster were to withdraw before a general meeting has been summoned. It would create an impression which nothing could remove that he had been induced to withdraw under influential pressure, and under these circumstances the choice, on whomsoever it might fall, would at once be strongly and openly repudiated. Nothing that could be done would so effectually break up the party. I am extremely obliged to you for writing to me.

Yours very truly,

HENRY FAWCETT.

Earl Granville to Playfair.

ALTHORP, NORTHAMPTON,
January 25th, 1875.

MY DEAR PLAYFAIR,—Many thanks. Can you lunch at two at Carlton Terrace on Saturday? We must devise something to save the party from the depth of ridicule which squabbling debating society speeches on Wednesday may produce.

Yours, G.

As Playfair has already stated, something *was* devised at this Saturday luncheon. It was recognised, even by those who had been entirely favourable to Mr Forster's nomination for the leadership, that if his candidature were persisted in there would be a disastrous "split" in the party, and to Playfair—who was Forster's warm personal friend and admirer—was entrusted the task of conveying this opinion to that eminent man. Forster, as has already been told elsewhere, when he saw that the interests of his party seemed to demand the sacrifice of his candidature, did not for a moment hesitate to adopt the view which Playfair had put before him. He called on Lord Granville, and, to

use his own words, "came away with the leadership given up." By his generous self-sacrifice he thus prevented his party from falling into that "depth of ridicule" which Lord Granville anticipated and deplored. When the meeting was held, under the presidency of Mr Bright, Lord Hartington's was the only name submitted to it, and he received that appointment of Leader of the Opposition in the House of Commons which he continued to hold until, barely five years afterwards, Mr Gladstone was summoned back to power and resumed his old position. Most of this story is already known to the world; that portion of it which will be new to all my readers is the part that Playfair had in preventing a disastrous Liberal schism.

CHAPTER X.

PARLIAMENTARY WORK.

Playfair's Domestic Affections—Death of his Second Wife. AUTOBIOGRAPHY: The Dundonald Case: The Victory won at Last: A Visit to the States: Emerson and Longfellow: Chicago: A "Typical American" from Paisley: Adopting a Young Lady: At Washington: A Visit to the Lunatic Asylum: Attacking the Indian Salt Tax: Presiding over the Manchester Water Supply Committee: The International Exhibition of 1878: Another Visit to America: Reception at Montreal: Curious Experiences in a Rough District: Dining with the Canadian Cabinet: A Talk with Lord Dufferin. Playfair's Relations with the United States—His Letters from America and elsewhere—His Correspondence with Miss Russell and her Family prior to His Marriage—His Social Charm—His Passion for Public Work.

VERY little has been said of Playfair's domestic life since his marriage in 1846 to Miss Oakes. In his chapters of autobiography he confines himself almost entirely to those public affairs in which he was so deeply engaged, and the reader is left almost in the dark on the subject of his personal and family history. As a matter of fact, no man was more dependent for his happiness upon his personal surroundings and social environment than Playfair. But he had to some extent the reticence of his race, and during the period of intense and unremitting labour, which extended from his youth until he had passed his sixtieth year, his family life was kept strictly apart from public affairs. His love for those of his own household was deep and tender; and his sympathy with his children was unfailing. But they had to pay the penalty of being the children of a public man, the demands upon whose time

were so great that he could not enjoy the unfettered domestic leisure which falls to the lot of those who are not absorbed in unselfish labours for the general good. In later years, though Playfair's work did not diminish as it should have done in consideration of his age, he was able by changed circumstances to combine devotion to duty with those domestic pleasures which he relished so keenly. His first wife, Margaret Eliza Oakes, had died in 1855. Some two years later he was married to Jean Ann Millington. This lady died in the spring of 1877. The following chapter of autobiography dates from this time.

AUTOBIOGRAPHY CONTINUED.—IX.

1877 to 1879.

IN April, 1877, I took an active part in moving for a Committee to carry into effect the will of the great naval hero Lord Dundonald, in favour of his grandson, Lord Cochrane. This will was written in the year of his death, and I read in the House from the autograph will the following words :—

"I leave exclusively to my grandson, Douglas, all the sums due to me by the British Government for my important services, as well as the sums of pay stopped (under perjured evidence) for the commission of a fraud on the Stock Exchange. Given under my trembling hand this 21st day of February, 1860, the anniversary of my ruin."

Time passes so quickly and events fade so soon in its passage that few persons recollect now to what the old man alluded. Lord Dundonald is better known as Lord Cochrane, when he was the greatest, as well as the last, of the old clan of British seamen renowned for dash and daring before steam altered naval tactics. Early in the century Lord Cochrane sat in the House of Commons as a Radical Member for Westminster; in 1814 he received the

command of a vessel which was about to leave London, when he heard, as all the public did, that on the previous day a fraud had been committed on the Stock Exchange. A man called De Berenger, dressed in the uniform of volunteers, and wearing the Cross of St. Louis, landed at Dover in a small boat, and announcing a great victory, posted immediately with the news to the Stock Exchange in London, causing a great rise in the price of Consols. Upon that rise Lord Cochrane made a few thousand pounds, while his uncle, Admiral Cochrane, obtained a much larger sum. De Berenger, after delivering his false news at the Stock Exchange, entered his carriage, in which was a carpet bag, drew down the curtains and drove to Lord Cochrane's house. He was admitted by a servant, who swore that he was in plain clothes. Much of the evidence turned upon the truth of this statement. Had the false messenger arrived in his uniform and changed his clothes in Lord Cochrane's house, the latter must have known there was something wrong in the visit, which had for its professed object to obtain some berth in his new ship. But if the man changed his uniform in the carriage for plain clothes, there was no reason to suspect that Lord Cochrane knew anything of the conspiracy on the Stock Exchange. It was proved beyond doubt that weeks before he had instructed his stockbroker to sell consols when they reached a certain figure, and that the latter had acted on past instructions.

Lord Cochrane was tried before an extreme Tory judge, Lord Ellenborough. The verdict went against him, and a new trial was refused, although Lord Chancellor Campbell remarked that the verdict was "palpably contrary to the first principles of justice, and ought immediately to have been reversed." As a result Lord Cochrane was fined £1,000, was sentenced to stand in the pillory, was dismissed from the Navy, was expelled from the House of Commons, was stripped of his orders of Knighthood, and had his banner torn down from his stall as a Knight of the Bath. It was actually kicked out of Westminster Abbey by the public executioner. The only portion of the sentence remitted

was that the gallant hero should stand in the pillory, and this was remitted not from mercy but for fear of an insurrection among the people. His fine of £1,000 was paid by subscriptions not exceeding a penny by working men, and the Bank of England note for this amount, with an indignant protest in Lord Cochrane's writing, is now framed and preserved in the Bank. This happened in the year 1814, but it was not till 1832 that he was restored to his rank in the Navy, without back pay. The decoration of the Bath, which he had won in battles which were the glory of his country, was not restored till 1847, and the order to restore his banner to the stall in Westminster Abbey only arrived when the hero was dead, on the 31st October, 1860.

My present effort was to carry out the will of Lord Dundonald by getting his back pay as an acknowledgment from the nation that he had been treated with great injustice. I read in the House the last letter which the old admiral wrote to me on his death-bed. It is as follows :—

12, QUEEN'S GATE, SOUTH KENSINGTON,

Lord Dundonald to Playfair. *October 25th*, 1860.

MY DEAR FRIEND,—My health was improving so fast, a couple of months ago, that I had formed the intention of spending the remaining portion of my life in my native land. Since then the progress has not warranted the attempt, as I am still unable to subject myself to the slightest agitation—even when the horses walk with the carriage. In the spring (D.V.) I may be able to avail myself of the kind offer you make.[1] I send you the second volume of my Autobiography, which I hope is written with sufficient plainness to enable you to see how I have been treated by the Political Varlets whose administration will be the ruin of our country unless

[1] Lord Dundonald had written to ask whether I would receive a visit from a dying man, as he wished to see and to die in Scotland, and I had replied that I would go to London to bring him down, not to die but to recover.

some Garibaldi steps forward and rescues it. Excuse brevity, as I am much indisposed, and believe me,

Most truly yours,

DUNDONALD.

As the whole world by this time had come to the conviction that Lord Dundonald was entirely innocent, the House could not refuse an appeal for a Select Committee, the members selected being excellent men, among whom were Spencer Walpole, Russell Gurney, Whitbread, etc. I declined to go upon it, as my feelings of friendship were too keen to make me a fair judge. The Committee felt perfectly satisfied of Lord Dundonald's innocence, but they hesitated as to the report from lack of evidence. At the critical point an interesting event occurred. In 1814 Lord Dundonald and Lady X. were in love, and, though they did not marry, always held each other in great esteem for the rest of their lives. Old Lady X. was still alive in 1877, and she sent me a letter, through young Lord Cochrane, the grandson, authorising me to use it as I thought best. The letter was yellow with age, but had been carefully preserved. It was written by Lord Dundonald, and was dated from the prison on the night of his committal. It tried to console the lady by the fact that the guilt of a near relative of hers was not suspected, while the innocence of the writer was his support and consolation. The old lady must have had a terrible trial. It was hard to sacrifice the reputation of her relative : it was harder still to see injustice still resting upon her former lover. Lord Dundonald loved her, and had received much kindness from her relative, so he suffered calumny and the injustice of nearly two generations rather than tell the true story of his wrongs. I had long suspected the truth, but I never heard it from Lord Dundonald. The brave old lady tendered this letter as evidence to the Committee, but I declined to give it in, knowing that had my friend been alive he would not have allowed me to do so. At the same time I showed the letter to the members of the Committee individually, and it had a great effect upon their minds, and no doubt helped

to secure the report recommending that the Treasury should pay the grandson the back salary of the Admiral. The interesting letter itself I recommended should be put in the archives of the Dundonald family, and this I believe has been done.

In the autumn of 1877 I visited for the first time the United States, the first of many subsequent visits to that country. On arriving at New York, I found an invitation to spend a week at Nahant, near Boston, at the house of Mr Russell. Mr S. H. Russell, with his wife and two daughters, had travelled in Europe in the summer of 1875, and I accidentally became acquainted with them at a *table d'hôte* in an hotel at the Hague. This acquaintance ripened into a friendship, and three years later (1878) the eldest of the daughters, Miss Edith Russell, became my wife. Through this family I at once became acquainted with the highly intellectual society of Boston. Longfellow, Emerson, Wendell Holmes, Lowell, Tom Appleton, and other men of light and leading I met at their house, forming many pleasant friendships for the future. Emerson I had known before, although my introduction to him had been singular and irregular. One night he came to a debate in the House of Commons and sat under the gallery. The door-keeper of the House was a man of literary tastes, and was distressed to observe that Emerson received no attention from members, so he asked me to speak to him. Having introduced myself, I pointed out to the American philosopher the leading politicians. The next evening I had a dinner party of clever men, so I asked Emerson to join us. Having an edition of his works bound in red morocco, I placed them in the drawing-room, and the author was particularly pleased to see them in this attractive form, so he inscribed his name in them, with the date.

Emerson now eagerly renewed our acquaintance, and returned my small hospitality. He invited me to Concord, and it was charming to drive with him over the ground where the first collision in the great War of Independence occurred, even though I had to remember the defeat of British troops in a bad cause. Emerson, at this time, was

in full possession of his great faculties. At a later period he found great difficulty in expressing his thoughts, though, so far as I observed, his mind was never lost, notwithstanding that in his latter years the words which he desired refused to come at his call.[1]

In 1877, however, Emerson was every inch the philosopher whose writings I had so long enjoyed and knew so well. In the Saturday club dinners at which I have been a frequent guest, I am pleased to remember that I have met Longfellow, Emerson, Wendell Holmes, Lowell, Parkman, and many other illustrious Bostonians in the zenith of their fame. Longfellow, in his old colonial house at Cambridge, formerly the headquarters of Washington, was the most genial and delightful of hosts. He was too amiable to refuse anyone who called, however obtrusive they might be. On one occasion I went to lunch with him, and observed a number of chairs in the library, so I remarked that he seemed to have had many visitors. "Yes," said the old poet, "countrymen of your own who had a leader called Mr Cook" (?Cook's excursions). "They sat there staring, without conversation, till a fat old lady opened it by saying: 'Now, Mr Longfellow, explain to us your views on the immortality of the soul.' This I positively declined to do." Longfellow used to tell with glee that, on one occasion, an English gentleman called upon him without an introduction, apologising by saying: "Mr Longfellow, as there are no ruins in this country for a traveller to look at, I have come to see you"! Longfellow, and I should add Emerson, were poets without being egotists. I have known many poets in my life whose very personality made them egotists; yet their egotism was delightful, and an essential part of their character. In the United States the strong personality of dear old Wendell Holmes, the autocrat not only of the

[1] A touching story illustrating this infirmity on the part of the great writer has been recorded. On the day when Longfellow, with whom he had been for many years on terms of the most intimate affection, was carried to the grave, Emerson, after attending the funeral, said to his daughter, "I do not remember the name of the gentleman who was buried to-day, *but he had a sweet soul.*"— ED.

breakfast table but of every other table, brings him into this clan. Yet his egotism is always exercised in giving pleasure to others, for he is the soul of geniality and good-fellowship, and there is not one among his many friends who would desire any change in his character.

In a first visit to the United States it was desirable to get a general impression of it as far as the time would permit, so after visiting the White Mountains and the Lakes George and Champlain, I went to Chicago. That wonderful city has often been described. But what surprised me more than its mushroom quickness of growth, after the great fire, was the state of intellectual development among the citizens. On the morning (it being Sunday) after my arrival I went to the public theatre, to hear a sermon by Professor Swing. The large theatre was crowded in every part, and I was glad to get a seat on one of the steps. The audience was singularly well dressed, much better than one in the Royal Institution in London. The clergyman advanced on the stage with a lady, and handed her respectfully to a seat. She was the chief soprano. The sermon was remarkable, the subject being "The Darwinian law of development applied to the coming of the Kingdom of God." The preacher was thoroughly acquainted with the views of Darwin, Spencer, Huxley, Tyndall and others; but what surprised me most was that the audience seemed also to be. I was so struck with the breadth and eloquence of this sermon that I sent the newspaper containing a full report of it to Darwin, who afterwards expressed his interest in it.

It was a thorough change from my first mental impression of Chicago to go next morning to the pig-killing establishment and listen to the boasts of how many pigs a minute could be carried by rail past the butcher's knife and dropped into a cauldron of boiling water. I expressed my conviction that the pigs were not dead, but only in a faint from loss of blood, when they entered the cauldron. The owner fairly replied—"Examine for yourself and see whether there is a quiver denoting pain," and this I could not see. But he admitted at the

same time that I was right, for occasionally, though very rarely, a pig got out of its faint and would leap out of the cauldron. An expression of the owner was suggestive: "My pigs are incarnated Indian corn." A glowing sun and illimitable land grow vast crops of this nutritious corn, too much for foreign export; but it is concentrated into meat and fat, and in the condensed form of bacon and ham the working men of Europe, especially in the colder regions, are warmed by the sun conserved in the fat and flesh, and are nourished by the products of the soil of the far West.

I do not like to part with my recollections of Chicago without referring in grateful terms to the hospitality I received there. I had not one letter of introduction, but immediately on my arrival the excellent clubs of the city were opened to me, and hospitality abounded. General Sheridan and the British Consul made my stay one of pleasant memories. An absurd mistake of nationality caused much amusement at the time. My travelling companion, Colonel Holmes, M.P. for Paisley, was surprised that we never saw a typical American—typical in the sense of the John Bull in English caricatures, and of the Brother Jonathan in American illustrated papers. At Chicago, however, my Scotch friend found his typical American outside the hotel. He was tall, lank, lantern-jawed, had a straw hat, and a semicircle of tobacco juice around him. I was immediately fetched to inspect this true type. We asked him how many generations his ancestors had been in America, and in what Western State he had been born. The reply astonished the two Scotch M.P's. "Hoot man, I'm no an American. I cam frae Paisley laist year!" After this experience we discontinued our researches for American types!

It is needless to describe the usual tour to St. Louis, Louisville, and other places so well known. The Mammoth caves in Kentucky naturally interested me much, but even they have been made familiar by repeated descriptions. Cincinnati is like Chicago both in the rapidity of its growth and in the character of its industries, while its houses, with their beautiful gardens, render it singularly attractive. On

travelling from Cincinnati to Washington I curiously had to adopt a young lady as my daughter for a single night. We had met a Scotch shipbuilder from the Clyde who was travelling with his daughter, a young lady of about twenty years of age. On crossing one of the rivers the conductor asked us to go to the rear car in order to see from it the high tressle bridge. About an hour and a half later, while sitting in the drawing-room car, the young lady expressed to me her surprise that her father did not appear, and I then noticed that my travelling companion, Colonel Holmes, was also absent. The conductor was asked to tell the missing gentlemen that their continued absence caused some anxiety, and he returned looking pale, for he found they were no longer on the train. I told him that I had left them smoking in the rear car. It turned out that this had been unhooked from the train after passing the bridge. It was now getting dark, and I was nearing an hotel where I had engaged rooms for the night. On asking the young lady whether she intended to go on by the night train to Washington, I found that she had neither ticket nor money, as her father carried both. She therefore stopped with me at the hotel, and was registered as Miss Playfair, and by telegraph I was able to assure the anxious father of her safety. Next morning he joined us, and we went on to Washington.

The day was most boisterous, as one of the heaviest gales of the Equinox was passing over the country. Towards evening we were playing at whist, when the train came to such a sudden stop that we were thrown out of our seats. The conductor would, as usual, give no explanation, but I had been on the engine and made friends with the driver by giving him half a dozen cigars, so I went forward. We were on a high tressle bridge, some 150 feet above a flooded river, and three of the arches had been carried away. The driver had luckily seen lights which were being frantically waved from the other side, and had succeeded by the steam brake in stopping the train just at the edge of the chasm. It was the exact condition of the disaster on the Tay Bridge, but

with this happy difference, that the train was stopped in time. We had to back the train and go round to Washington by way of Baltimore.

My first visit to Washington was during the recess, and so I have little to record except that I made the acquaintance of President Hayes and various members of his Cabinet, several of whom in after years became pleasant acquaintances. The National Museum, the great library, and the Education Department, naturally interested me much. One of my days was spent in the great Lunatic Asylum near the city, and I received a rebuke to my supposed knowledge there which has rendered me less confident ever since. I have always been interested in lunacy, and constantly visit asylums, so that I believed I could detect a lunatic by outward signs, and especially by the expressionless character of the hands of a patient. Left alone for some time in the female ward, as the physician was called away, I noticed a young lady sitting at a window, working at needlework, both her face and hands being in full expression with her work, so I presumed she was an attendant, and not a lunatic. She pushed aside her work and came quietly to me, remarking, "You, sir, are an English gentleman; will you represent my case to the English Minister? for I am not insane, and am kept here from interested motives by my relatives." I assured her that I would cause an inquiry to be made, if she were an English subject. She replied, "I am an American lady." I then explained that it was impossible for me, under these circumstances, to interest the English Minister, but I promised not to leave Washington without mentioning her case to Secretary Schurtz. The lady curtsied in a dignified way, and declined my interference. A few minutes after, she again approached me, and said, "I have been studying your face, and there is kindness in it; will you sit beside me till I state how badly I have been used? To make my case quite clear to you I must first explain that all the telegraph wires in the United States centre in my body, and I am subject to perpetual electric shocks!" I had become so thoroughly convinced of her sanity that I had

no reply ready, so I merely said: "Why, you are an electric phenomenon!" "Yes," said the poor lady, "those two words exactly represent my condition." I left the asylum a humbler but a wiser man.

The year 1877 and the following year have little to record in my Parliamentary life beyond the usual activity in questions of education. My efforts to reduce the salt tax in India were again renewed. Salt is a necessary of life as much as air, water, and food. Ten pounds of salt per head of the population form the lowest limit for public health. A salt tax is, therefore, in the nature of a poll tax, for it affects every person in the whole population. In a country like India, where the wants of the people are few, it is difficult to find commodities for taxation, so a tax upon salt is always the resource of Indian financiers. But such a tax is especially heavy on a population like that of India, which chiefly lives on starchy food. Less salt is necessary with an animal diet than with one which has for its staple rice or potatoes. When the Irish lived on the latter, they consumed much salt, and so must the rice-feeding peoples of India. Taxation, of course, lessens consumption. Before the Revolution in France, the salt tax was onerous, and partly led to the general upheaval of the nation. In the districts of France which purchased immunity from the *grande gabelle*, the consumption of salt rose to 18 lb. per head; whilst in the heavily taxed districts it scarcely reached 9 lb. The same has been the experience in India. Formerly, when the salt tax was low, the consumption in India is said to have been 15 to 16 lb.; whereas in Bengal (1877) it is only 10 lb., and in Bombay 9.7 lb.

The salt tax is essentially unfair, for it does not take into account the ability of the consumer to pay. The beggar must pay just as much as the highest rajah or the richest trader. You might tax food of any kind, and the consumer might live on untaxed diet: he might subsist on herbs, slugs, or caterpillars, and still preserve life. But salt he must have, as it forms more than fifty per cent. of the mineral ingredients of the blood.

My attacks on the salt tax of India did not procure its abolition, but, I hope, partly caused its large reduction; and, as a consequence, consumption rose, and recouped the Indian Government for the reduction of the tax.

During the session a private Bill was introduced into Parliament empowering Manchester to take water from Lake Thirlmere, in Cumberland. This produced much public excitement, the utilitarians promoting the Bill, the lovers of beautiful scenery in the Lake district vehemently opposing it. The House took the matter into its own hands, by appointing what is termed a hybrid Committee, partly consisting of members to represent public, and others to represent local, interests. Of this Committee I was appointed Chairman, and pretty heavy work it was with the array of numerous counsel learned in the law to protect the several interests. The Committee reported in favour of the Bill, but took special care that the beauty of the district should be enhanced, and not deteriorated. This was easy, for formerly the lake was larger, but the water had worn away a natural dam and partially emptied itself. We gave power to restore the natural dam in a picturesque way, and thus increased the size of the lake. I presume that my judgment was good, for public excitement was calmed, and I have never since heard a word against our decision.

This year (1878) there was an International Exhibition in Paris, and a Royal Commission was issued in England to exhibit English products. The Prince of Wales became President of the Commission, and at his request I acted as Chairman of the Finance Committee. Sir Cunliffe Owen, who has a genius for displays of this kind, was a most efficient executive officer; but he is not an economical administrator, and it was only through his friendship for me that he restrained himself to a reasonable expenditure. The Exhibition, particularly the English section, was eminently successful. The Prince of Wales acquired much reputation for the attention and skill which he bestowed on the management. At the close of the Exhibition,

President Grévy promoted me from the rank of Officer to that of Commander of the Legion of Honour.

In this year (1878) I repeated my visit to the other side of the Atlantic. On this occasion the object was of great personal importance, for during the visit I was married, on October 3rd, to Miss Edith Russell, of Boston, who has been to me a constant source of support and sympathy, both in my private and public life. Probably few marriages have had so many literary celebrities as "assistants," for all the poets and philosophers to whom I have formerly alluded were present.

On the occasion of this American visit, I went to Canada previous to my marriage. I reached Montreal at night without my luggage, which was to follow by railway. As it contained my letters of introduction, I felt the sense of loneliness that one experiences on arriving in a large town without knowing a single soul, and in this state of mind I went out to see the cathedral. On returning to the hotel, I was amazed to see my table covered with visiting cards, all from medical men. The landlord explained that there was a congress of all the medical men in the Dominion; and, as a biography of myself had appeared in the Montreal papers that morning, he supposed that was the cause of the numerous callers. Accordingly, I went to the sitting of this medical congress, which was open to the public. I had scarcely been there ten minutes, knowing no one, when the President announced that I was in the Hall, and proposed a suspension of the rules, that I might be made an honorary member. He then further proposed that I should be received "with standing honours," an American ceremony quite new to me. This consisted in two members coming solemnly to the back form, on which I was sitting, and taking me into custody by flanking me on each side, and then conducting me through the upstanding assembly to the platform, where I was at once asked to make a speech. I have mentioned this incident because it profoundly impressed me at the time with the fact that every public man in England, if he has tried to be useful,

is welcome in every part of the Empire. Though my letters of introduction arrived the next day, I had never occasion to present them. The hospitality was boundless, and I found it was supposed that I could eat two dinners and two suppers every night. Since then I have always been a warm friend to what is called the federation of the Empire. Political federation may be in the dim and distant future, but unity of interests and of sentiment already exists, and can be readily promoted. I am not a prominent politician, and at best am only a humble reformer of the social condition of the people; yet, in spite of that, Canada was as much a home to me as my mother country.

I may give one or two other illustrations of this community of country. I went up the river Liévre, a tributary of the Ottawa, to see some deposits of phosphate of lime. In 1878 it was, and still may be, a rough district. The hotel in which I slept was primitive, and the bedroom had all the appearance of belonging to some rough customer, to judge by the coats, gun and pistols hanging on the walls. At three in the morning my door was violently shaken and I was summoned to give up the room, as its owner had returned. On opening the door I pointed to the bed from which I had beat a speedy retreat, and offered it to the owner, saying that I was content with three chairs in the centre of the room. My fellow-occupant of the room was an Englishman, jolly and pleasant, though leading the rough life of a mining adventurer, and, as neither of us would risk the bed again, we sat up for the remainder of the night, and he gave me much useful information.

The next day, with some friends, I went further up the Liévre to see some mines of mineral phosphate. The manager of these was a Scotchman, tall, big-boned, with the strongest Glasgow Doric in his tongue. At first he was obdurate, and desired us to leave the ground and to drop the specimens which we had taken before he appeared. At last I addressed him in good Scotch, and asked him whether he thought I was a mining adventurer—"Ay! that's just what ye are." "No," I replied, "I am a Scotch

professor." "Then if ye are, ye'll be havin' a name." "My name," I said, "is Playfair." "Man!" said my Scotch friend, "are ye Lyon Playfair?" I assured him I was, but expressed surprise that he knew the name, to which he replied, looking from his six feet two inches with compassion on my five feet four inches, "Hoot man, yer name's travelled further than yer wee legs will ever carry ye." After that nothing was too good for us. He took us down the mine, gave his best specimens, and produced a good leg of mutton "and a drap of raal Scotch whisky" for our refreshment. I had given a small present to his little daughter, but as it was in money he would not allow her to keep it, asking in exchange for my photograph. So even at the mines in this rough district one was welcomed as a friend.

On going up the Liévre I had sent my luggage to an hotel at Ottawa, with a letter stating that I should arrive by the steamer on the following Wednesday evening. On reaching the wharf the private secretary of Mr McKenzie, then Prime Minister, met me and said that he had asked his Cabinet to dine with him that night to meet me and that I had just time to dress for dinner. This was true hospitality, for I had not even a letter of introduction to Mr McKenzie, and he could only have heard of my intended arrival through my letter to the hotel. It was most pleasant to meet the Canadian politicians in this way. Mr McKenzie was originally a stonemason, and still retained the Scotch accent which few Scotchmen care to lose. I found him to be a most intelligent politician, worthy to be the leader of a party. He lost that position in the following year, and breaking health prevented him from regaining it. On the occasion of this visit, while at Toronto, I became acquainted also with the Conservative leader, Sir John Macdonald, whom I have, since then, had many opportunities of meeting. He, still more than McKenzie, had the qualities of a leader of men, and has certainly done much to develop the industries of his country, in spite of his love for a protective tariff.

Before leaving Canada I went to Quebec to pay my

respects to Lord Dufferin, whom I had known for many years.

The Governor-General was going that night to Montreal to take his final leave of Canadian public men before sailing to England. In spite of that his hospitality was, as usual, munificent, and he managed to compress into his final day a picnic to the falls of Montmorency and an afternoon reception of ladies at the Citadel, as well as a pleasant small dinner before he went on board the steamer which was to take him to Montreal. Perhaps my unexpected visit was useful, as he wished much to talk with a public man upon a pressing invitation from the Government that he should assume the government of Victoria for a year or two. This was a proposal clearly incompatible with Lord Dufferin's great success as Governor-General of Canada, and I strongly urged that he should accept no office lower than that of Viceroy of India if he were to continue in a similar career. He may recollect that in the long walk at the top of the Citadel in Quebec my appreciation of his position at the time was higher than that which, from his own modesty, he himself felt inclined to form.

Playfair's visit to the United States marked the beginning of a new epoch in his personal life. Not only did it lead to his marriage to the wife who survives him, but it opened up for him a host of pleasant friendships on the other side of the Atlantic, and secured for him a position in the United States enjoyed by few of his contemporaries among the public men of England. During his later years, his visits to America became annual events ; and with his happy faculty of making himself at home wherever he might be, he very quickly learned to appreciate America, without losing any of his patriotic devotion to his own land. Scarcely any Englishman of our time had a wider range of acquaintanceships among the American people. With the public men and men of letters of Washington and Boston he speedily came to be on familiar

terms. To the study of American politics he brought a close and sympathetic attention, and in due time it was his happy lot to be able to render great services both to Great Britain and the United States under circumstances of exceptional gravity. It is too early in this narrative to speak of the work he did in connection with the Venezuela crisis, when the peaceful relations of the two countries were, for a time, seriously threatened; but it may be said here that this work could not have been accomplished if he had not prepared himself for it by his repeated visits to America, his close study of American institutions and affairs, and his friendship with many of the most distinguished persons on the other side of the Atlantic. For these reasons it seems desirable to supplement his own brief narrative of his first visits to the States by extracts from his correspondence at the time.

Playfair to his Daughter.

S.S. Germanic, NEAR SABLE ISLAND, *August 30th*, 1877.

MY DEAREST JESSIE,—So far we have had a remarkably prosperous and fine voyage, and we hope to reach New York about ten o'clock to-morrow (Friday) night. If we do, it will be the quickest voyage on record. On only one day we had a gale, which split two sails, and confined me to bed till lunch time. For the rest it has been like a yachting excursion. The passengers are a merry lot of people. Last night we had a solemn trial, before a judge and jury, of a passenger who had proposed marriage to six young ladies. The counsel did their part very cleverly. The culprit was found guilty, but recommended to mercy on account of his age. I thought the whole thing a piece of excellent nonsense; but two of the lady witnesses assured me that he had actually proposed to them, although he is notoriously a married man. To-night we are to have charades. The study of character is amusing. I have formed no pronounced friendships with anyone, for the sort of chaff which goes on is too *prononcé* for me; but I have made friendly acquaintances.

The *Germanic* is a superb vessel, and the officers excellent. They are anxious that I should return with them on the 13th October. My present intention is to sail with the twin vessel, the *Britannic*, on the 3rd November; but if I feel homesick, I may sail on the 13th October, for I should much like to return with this ship. Mr Holmes, the M.P. for Paisley, is on board, and is a very genial, pleasant man. I think that it is likely we shall join together after eight or ten days, during which he makes a visit, as I do also. It will be pleasant to have a travelling companion. I will add to this letter when we are in sight of New York, for the mail starts in the morning, and we will just be in time to catch it. . . . We shall not reach New York till twelve at night, and this letter will be sent off at once on board the *Richmond*, which starts at eight to-morrow morning. Our average speed since we started has been 18½ miles per hour, so we have had a glorious passage. I cannot give you any other address than the Russell's at present. I go there on Tuesday, and probably shall stay four days. When you get this I expect to be at Niagara, and shall then go to Toronto, Montreal, and Quebec, and return to the States after a short tour in Canada.

Same to the same.

LAWRENCE HOTEL, MONTREAL,
September 13th, 1877.

MY DEAREST JESSIE,—I am not sure whether it is your or Ethel's turn for a letter, but in any case I fancy you circulate. My last was from the White Mountains to Lucy. Now I am in a city, the great mercantile capital of Canada. I have seen the first of the great American rivers, the St. Lawrence, and yesterday I shot the rapids of Lachine. That certainly is a most astounding performance. The steamer at full speed goes into the boiling waters, three stalwart men and an Indian pilot at the helm, with faces of intense anxiety, for they know that with one false turn the ship will be in pieces. You feel the ship actually fall under you as it descends. Rocks everywhere, ahead, and to right and left, not distant, but so

close that contact seems inevitable. Then a turn of the wheel, and the steamer winds between them, only to face another rock. In this way for fifteen minutes the steamer tosses on a violent sea, so that you have to hold on to rails and spars, with rocks everywhere apparently touching the sides. I would not have missed the sensation for anything. Very few wrecks take place now, as the old Indian pilot has such nerve and keenness of eye.

I arrived in Montreal without a single letter of introduction and alone, for Colonel Holmes is visiting some friends for a few days. I felt desolate in this huge hotel, and thought how sad it was to be in a great city without a friend. Early on the following morning (Saturday) I went to the post for letters, and found two, from Edith and Alice. On my return I found my table covered with cards and invitations. Though I only arrived at 9 p.m. the previous night, the papers had got hold of my arrival, and published accounts of my life. The hospitality has been overwhelming. Including a heavy lunch at 12 o'clock, I had to go to three dinners and a supper yesterday. The President of the Board of Trade gave me a lunch and one dinner, and the President of the Bank a supper, with thirty guests—a most elaborate affair, from which I returned at 1.30; no end of speeches and compliments. To-day I am to dine with the medical men of the city, and have a very hard day of sight-seeing before me. There is something strange in finding when you cross the Atlantic that your name is as familiar among strangers as in your own land. Instead of exultation, I feel deep humiliation that I have done so little to deserve all the kindness and attention which is shown me in America. My little private secretary, Edith, writes me that letters have come from you and George, but she has forwarded them to Niagara, and I shall not get them for four or five days. I was afraid of losing them *en route*. To-morrow I go to Ottawa by the river of that name. It is a thousand miles long. On Monday I hope to be in Toronto, and on Wednesday at Niagara. Montreal is a fine city with its churches and public buildings, and its splendid frontage on the St.

Lawrence. The domes and roofs are covered with tin, and glitter strangely in the fierce sun. Its people seem almost the most hospitable on earth from my limited experience of them.

Playfair to Mrs Oakes. WASHINGTON, *October 7th*, 1877.

MY DEAR MARION,—I have intended frequently to write to you; but my intentions have relegated themselves to the region of postponed good deeds. I do not know whether Jessie and George have kept you acquainted with my wanderings, but, in American parlance, I have had an uncommonly "good time" of it. In the first place, I have never felt so well in travel as I have in America. In fact, I have rarely felt as well. Then everybody has conspired to spoil me. The kindness and hospitality of the people is unbounded. The fact of being English is a passport in itself; but the additional fact of having any kind of reputation as a public man opens all doors. At Washington the President and all the Ministers have been especially civil, and I have enjoyed this place much. But nothing more than last night, when the astronomers invited me to look at Saturn and Mars through the great 26-inch telescope which lately discovered the two satellites of Mars. Saturn was absolutely glorious with his belt and moons. Mars showed his lofty, snow-clad mountains at the Pole, and that wondrous black spot to the right of his centre.

I thought of you at the mammoth caves of Kentucky, and wished you were there to enjoy them. You might not have liked the entrance swarming with bats, but the interior is marvellous. In the eighteen miles' walk underground there is perpetual change. Lofty caverns, then more passages through which you must walk nearly double, rivers and waterfalls, make such delightful variations that you forget the fatigue of the excursion.

The Alleghany Mountains form, at this season, the most exquisite scenery one can imagine. They are wooded to their top and base, and with such wondrous tints of green, brown, scarlet, bright yellow, and ochre, that continual bursts of pleasure escape from you. At the foot of the

Alleghanies we nearly lost our lives in a hurricane and flood; and I am sorry this incident mars my impression of the exquisite scenery through which we passed. It was a dark night, and had our train gone a few yards further before noticing distant danger signals on the line, we should have been precipitated into a chasm 110 feet deep, for the supports of the bridge had been swept away by the floods.

I am waiting for a carriage to call to take me to church, where 700 lunatics of Washington will be present. The Government have detailed the Minister of Education, General Eaton, to look after me; and he is the most energetic of human beings, and never lets me rest a moment without sightseeing. I have never time for dulness, and my nice American family, the Russells, do not allow me to feel away from home, for I have daily letters from some of them. Love to Sarah and Tom.

Ever affectionately yours,

LYON PLAYFAIR.

Playfair to his Son. WASHINGTON, D.C., *October 7th*, 1877.

MY DEAR GEORGE,—I wrote Ethel a long letter describing my arrival, and how you were within one minute of losing your father. I also told her, I think, how kindly I was received by the President of the United States, and by his various Ministers; but now, while it is fresh in my mind, I want to tell you what a strange Sunday I have passed. The State Lunatic Asylum sent me an invitation to dinner to-day, with a request that I would attend evening service. St. Elizabeth Asylum is beautifully situated on a hill on the other side of the Potomac from Washington, which spreads in a grand panorama before it. There are 700 patients of all classes, but the bulk consists of old soldiers, most of them—in their own estimation—of exalted rank. One German came up to me and told me he was a General Commander-in-Chief of the Army, and Surgeon to the Metropolitan Police. I enclose his card which he

handed me. He told me he wrote poetry in four languages, and presented me with a French 'Ode on Winter,' which I enclose. Another mighty gentleman was strutting about in a flowery dressing-gown, and welcomed me to America because he was perpetual President of the United States, elected for life at the last Census. He was in doubt whether he should welcome me, or order my head to be cut off in punishment of the English war of 1812, but, seeing I wore spectacles, he determined to pardon me. The religious service was conducted with great decorum, and the music was good.

In coming back from the Asylum, I passed a negro camp for worship, and I got out of the carriage and joined the congregation. It looked like a sort of fair, with booths and eating and drinking going on; but in one part was a tent where the religionists performed, one side being open to the congregation, which sat on benches, or stood in the open air. About seven or eight hundred negroes were present, some well and smartly dressed, and others very like our street minstrels. The sermon, probably No. 50, for the affair had been going on all day, was ending as I entered—indeed, it was ended by a stalwart negro woman beginning to jump frantically. Each leap seemed to be a yard in height, and she continued at this saltatory exercise for about five minutes without uttering a sound. The congregation became excited, and swayed sideways like a pendulum, with a monotonous cadence. The jumping woman at last fell down exhausted, and then began to groan horribly. The lot of darkies knelt round her, and began to sing at the top of their voices, "The Lord is God, let Him raise her: the Lord lift her up, Hallelujah! The Lord Him very strong and mighty, He will raise her, Amen. Hallelujah!" This went on for a long time, and ultimately the fat woman got up; and, as a respectable and quiet negro who saw me interested explained, "Because the devil kept her down; but the mighty Lord overcame the devil, and she stood straight." This was a triumphant moment, and made about a dozen negroes intensely mad. They began to jump and sing and clap

their hands with frantic violence, shouting out religious ejaculations. All that I could distinguish were the following:—"The Lord is mighty to save the nigger, Hallelujah! The Lord Christ saves the nigger, Amen! The Lord don't differ between white and black, Hallelujah! He strikes the devil with a bang, Hallelujah!" and so on. But the effect was extraordinary. These lunatics went dancing and clapping their hands all through the congregation. Some of the old negroes looked on with solemn faces of profound interest, others joined in the dance and whirled about screaming and gesticulating, until the whole camp became so excited that I thought it better to be off, as some of the negro women looked as if they would favour me with their ecstatic embraces. The whole affair is the dancing epidemic of the Middle Ages still existing among the negroes. I thought all this had died out, but it is still to be found among the old slaves. Many of the negroes now deprecate this excited worship, and have become quiet and orderly citizens. You see as well-dressed black men and women in Washington as among the whites; but, as this city was a great centre of the slave trade, there is the residue of negroes demoralised by slavery, and this camp had been set up by this class.

Playfair to his Daughter.

LAFAYETTE COLLEGE,
October 12th, 1877.

MY DEAREST JESSIE,—I have had such a busy day. The Philadelphia and Reading Railway gave me an express train all to myself for about 170 miles in all, to enable me to see the anthracite coal region, and to bring me here. At the coal mines they had a champagne dinner to welcome me, and I was much interested in seeing their mines. I reached the college about seven o'clock, had supper, and was introduced to about twenty professors. About eleven o'clock I heard a drum outside, which was soon followed by a band. About 300 students had formed a torchlight procession to give me a welcome and serenade. The band had lamps in their caps, and these, with torches, made a pretty display.

They played several tunes, and sang college glees, and I was obliged to go out and make a speech. The President and professors knew nothing about this serenade, which they assured me the students had got up extemporaneously on hearing of my arrival. You will see that if I am not spoilt, it will not be the fault of the Americans, who heap all sorts of kindness upon me. I was much touched by the students' welcome, as it reminded me so much of my college days in Germany. This is a sort of typical college where Americans of moderate means can study at about £60 or £70 per annum. They know how to cheer as well as the English do, and at the end of each cheer there was a sort of refrain of "La-fay-ette" converted into an additional cheer. You may form some idea of the students' procession by the enclosed vignette of the students in front of the college on another occasion. I also enclose an excellent likeness of my host, President Cottell. He once breakfasted with us in Edinburgh. He is as pleasant as he looks in his portrait. I was so pleased yesterday to hear of Lucy. I hope by this time the dear girl has recovered.

The reference at the close of the foregoing letter was to the wife of his son, Major, now Lord, Playfair. Within a few hours of writing, Playfair received the sad intelligence of her sudden death.

Same to the same.

ALBANY, NEW YORK COUNTY,
October 19th, 1877.

MY DEAREST JESSIE,—The brief news of dear Lucy's death upset me much, and I look with great anxiety for your next telegram. . .

I really scarcely know what has happened to me since this day week, when I got the telegram of Lucy's death, for I have been so stunned by it. I know only that for the last three days I have been staying with some good Samaritans, the Sargents, on the Hudson River, which is as beautiful as the Rhine. They are friends of the Russells', who wrote to them to take me to their house, and they were exceedingly kind and sympathetic with me. They

took me to see the celebrated Ladies' College at Poughkeepsie. Here three hundred young ladies are going through a regular University education. At the Observatory I found six really beautiful girls working with the telescope, which they manage excellently. I lunched at the College, and as some of the young ladies took a fancy to me, I was invited to their rooms, and saw the whole economy of the establishment. The Lady Principal assured me that no visitor had ever been invited by the young ladies in this way on any previous occasion. The medical attendant was a Dr W——, a nice-looking widow, and it was funny to hear her always addressed as "Dr." The lady teachers were called "Professor"—Professor M——, etc., being all in petticoats. The teaching and its results were very good, and I did not see a single prig among the young ladies. To-morrow I go to the Russells', and shall probably stay with them till it is time to join my steamer at New York on the 3rd November.

Immediately on his return to England from this first eventful visit to the States, Playfair found himself involved in the public labours which engrossed his attention. Having been appointed a member of the Universities Commission, he had to go to Edinburgh in the company of Huxley and Froude, to transact business in connection with it. From Edinburgh he had to travel to Liverpool to address a great meeting on the subject of Female Education, and from Liverpool he was called back to London by his duties as Chairman of the Finance Committee of the English Commissioners for the Paris Exhibition. The reader has seen how fully his position as a useful servant of the public was recognised, even in remote places in Canada and the United States. At home also he met from time to time with similar recognitions that touched him deeply. The following letter referring to the Liverpool engagement of which I have spoken, is a specimen of the rewards he occasionally received for his life-long services in the cause of education.

Mr Rathbone to Playfair.

18, PRINCE'S GARDENS, LONDON,
January 18th, 1878.

DEAR DR PLAYFAIR,—I hope a couple of small boxes of "*entre-actos*" (excuse my deficiency in Spanish) will reach you in safety, and hold me in fragrant remembrance with you, as you certainly will be held in grateful remembrance in Liverpool without any such reminders, especially by the poor girls whose cause you have assured. I am writing to the Secretary of the Council to confirm what I hinted at the meeting. I have told him that I will give this year, next year and the year after, a Scholarship for girls, each to be held for three years, and to be called "The Playfair Scholarships;" and if they are found as successful as I hope they will be, I shall hope to continue them should life and prosperity last. Once commenced, I have no doubt they will be followed up by others, so in this you will have some material guarantee that your very great kindness in coming to us at such a busy time will not have been thrown away.

Believe me,

Yours faithfully,

W. RATHBONE.

The work connected with the Paris Exhibition took him to the French capital more than once during this year, 1878. He was as usual one of the leading spirits in connection with the business of the English section. His experience, greater than that of any other man in the management of these huge international shows, was laid under contribution, not only in connection with the purely English portion of the Exhibition, but by outlying parts of the Empire; and the following letter from the Canadian Prime Minister, Mr McKenzie, shows that his visit to Canada, and the hospitalities showered upon him there, quickly bore fruit in the shape of work for the Canadian Dominion.

The Hon. A. McKenzie to Playfair. OTTAWA, *May 12th*, 1878.

MY DEAR MR PLAYFAIR,—I duly received your very welcome letter written from Paris concerning our work at the Exhibition. I hope you will not be displeased at my giving your letter to the Press. I knew it would afford our people so much pleasure to know what you thought of their efforts to make a creditable appearance at this gathering of nations, that I was tempted into publishing your note. The "trophy" was a second thought, consequent on His Royal Highness's invitation to Canada to occupy that particular space. I could not refuse the invitation of so good a friend as he has always proved to Canada since his visit to us eighteen years ago. We had too little time, however, to do what we would have liked to do, and I am all the more gratified to know you like its appearance. I had a good map made of British America for the Exhibition, which you have not yet seen, as it would only reach Paris after you wrote. I would be glad if you would see it on your next visit. It is the first really good map we have had made, and I hope it may attract some attention at least to the size of Canada.

I trust that the danger of immediate war (with Russia) is over. The political situation causes us much anxiety here, as the hordes of idle Irish Fenians in the United States are only waiting the outbreak of war to make a series of raids over our long frontier. We are compelled even now to make much silent preparation in moving munitions of war to convenient places, and also in making arrangements for calling out our active militia. I need not say how much I shall be gratified to hear from you when convenient.

Yours truly,

A. MCKENZIE.

Playfair to his Daughter. ATHENÆUM CLUB, *June 1st*, 1878.

MY DEAREST JESSIE,—I had a charming dinner last night at Dean Stanley's. The Crown Prince and Crown Princess, Mr Kinglake, George Eliot, Mr Morley, Mr

Froude, Lord and Lady Ripon, Mr G. H. Lewes, Anthony Trollope, Sir Garnet and Lady Wolseley, Captain Burnaby, Mr and Mrs Goschen were of the party. You will see I was charmingly placed next the Crown Princess, and had long talks with her, as well as with George Eliot, whom I took down to dinner, and with the Dean, who is always a delightful companion. The Crown Princess continually broke into ejaculations, and said she thought I was little older than I was in 1851—a very comfortable assurance, for I am just turned sixty. I enjoyed my dinner exceedingly. I would put a white chalk mark against the day had there not been so many disasters in it. Three men died whom I knew well: Russell Gurney, Mr W. Martin (who died actually within the House of Commons), and Mr Tait, a son of the Archbishop, whose acquaintance I made in the Russells' house at Nahant. I start by the *Baron Osy* for Antwerp to-morrow, and hope to get to my destination, Duren, at the base of the Eiffel mountains, on Tuesday.

It was in the autumn of this year that Playfair, who had been working with his usual energy at his public and private business throughout the summer, proceeded to America on a more important errand. He was married on October 3rd to Miss Edith Russell, of Boston, to whom he had become engaged since his former visit. I am permitted to make some extracts from his correspondence with Miss Russell and her family prior to his marriage.

HOUSE OF COMMONS, *January 18th*, 1878.

As I am waiting for a division likely to come on at 1 a.m., I may as well write to you from this place, which outsiders call "the best club in London." My regular hours are ended now for the season, I fear. My Liverpool visit was a great success. St. George's Hall was crowded. In the evening the Mayor gave me a State dinner in the Mansion House, and, besides the Council, had about seventy of the leading citizens. The bill of fare and toasts

at the dinner may amuse you, so I send it. But what pleased me most of all was that after my advocating scholarships for girls, the Member of Parliament for Liverpool arose and founded three scholarships of £20 a year each, to be called "The Lyon Playfair Scholarships." This was a real delight to me, for I think women are very hardly treated in their chance of intellectual advancement. I stayed three days at Mr Rathbone's very pleasantly, only we had forty at dinner each day, and I had to make three speeches on the Eastern Question besides the educational one.

January 23rd, 1878.

We are in great tension here as to the chances of peace. The Russian Emperor's courier is expected to arrive to-night with the conditions to be accorded to the Turks, and upon this will depend the position which England takes in the Eastern complication. You are happy in being outside those influences which are ready to plunge all Europe into war if Gladstone does not inspire wisdom in the rulers of our different nationalities. My American mania still lasts, and is kept up by my friend, the American Minister, Mr Welsh, coming up frequently to my rooms, while several Members of Parliament smoke cigarettes, although he is too virtuous to join. In my hotel we have nearly a dozen Members of Parliament, several of whom I know exceedingly well—the others only slightly. I spent last Saturday and Sunday with my friend Grant Duff, in a quaint old house in Twickenham, where Queen Anne was born, the great Lord Clarendon lived, and the Comte de Paris dwelt for twenty years. I do not know whether Queen Anne's ghost visited me or not in the night, but I certainly felt something moving under my pillow, and on striking a light I found a big black cat. This may have been a transmogrification of Her Majesty, so I treated it with great respect, and politely opened the door for its escape. Sir James Stephen, the celebrated historical lawyer, was at York House, and we had many stories, some of which you would have enjoyed.

January 30th, 1878.

Since I last wrote my private life has been uneventful. Last Sunday I spent with Sir John Lubbock at High Elms. . . . We had two very agreeable days, for I am very fond of the Lubbocks, and I think they like me. The Spottiswoodes were there, and Mr Minto, editor of 'The Examiner.' But private affairs are very trifling in importance compared with our great political crisis. The country seems to be drifting into war, and I am very unhappy. I believe all this might have been avoided had our rulers been more wise. There seems to be a marked apprehension of the aggressiveness of Russia. I wish England could pluck out the beam from her own eye before looking for the mote in her brother's eye. It is true that Russia in the last hundred and thirty years has won by conquest 1,200,000 square miles of territory, containing 15,000,000 of inhabitants. But England during the same period has won by conquest 2,300,000 square miles, containing 250,000,000 of population. I have supplied these figures to Bright to-night, and I hope he may use them with effect in his speech. For myself, I confine my speeches to subjects connected with the social progress of the people. And though tempted on occasions like this to go out of my self-restricted circle, I do not do so. . . . I wish that I had imitated Mrs C.'s example, and stayed at the Brunswick instead of coming home. For all the good I am doing to any human being, I might have pleased myself to this extent, although I fear my Bostonian friends would have become disillusioned in regard to me, and have found out that I was no better than the most ordinary clay of which all men are said to be fashioned, though in a chemical sense I do not know where the clay is.

BUCKINGHAM PALACE HOTEL, *February 6th*, 1878.

I have been very lazy this morning, for I did not get home till 1.30, and I am punished, for instead of having only twenty letters as usual to answer in the morning, my bad luck has brought me forty-six, so you see I cannot

write to you at much length. Gladstone gave last night one of the most eloquent speeches I have ever heard, even from him, but I fear it will have little effect in producing harmony. All the best speaking in this debate has been on our side, but the division will be 120 at least of a majority against us. My own impression is that the Liberals will not come into power again for eight or ten years. We have too many divided opinions to form a solid party. For myself, I have no wish to enter into office, as this is a severance from a great amount of useful work which one can render to the public in the ordinary routine of duty. Would you like, for instance, to know the callers who have been with me already this morning and their objects? It is now 11.30 a.m.

(*a*) Two persons called before 9.30, but I was not up, and they postponed till to-morrow.

(*b*) The accountant of the French Exhibition, to go over the accounts for January and the estimates for February. I signed a cheque for £500.

(*c*) The secretary of the Royal Albert Hall, to discuss the general policy, and to arrange for the annual meeting of shareholders next week, at which I take the chair.

(*d*) The solicitor of the City Companies, to consider proposals for advancing Technical Education in the City.

(*e*) Sir John Lubbock, to persuade me to go on the Direction of the Telephone Company (I had already declined to be Chairman).

This will give you an idea how a Member of Parliament must not be idle, even if he is not in office. I find my hours quite few enough to get through one's duty creditably. But I always find time for pleasant memories of my friends in Boston, and never forget them.

February 14th, 1878.

In about an hour I am going to the hotel to put on my blue and gold uniform, to dine with the Speaker. He gives a dinner to-night to all the members of the late Ministry,

and afterwards has a full-dress reception. Last night I dined with Mr Goschen, late First Lord of the Admiralty. We had various officers there who had just come from the Dardanelles. As our fleet is said to have received orders to force its way to Constantinople in spite of the Turks firing on the ships, their information was very interesting. Of course, long before this reaches you, the telegraph will tell you what has happened. Here, we are intensely anxious, and fear that war now can scarcely be avoided. Alas! this will render our bad commercial state much worse, and our people suffer already very much. I do not know how people with very narrow incomes stand the depressed state, for all our regular incomes are now nearly one-third below their usual amounts. There are some hundreds of coachmen unemployed in London, where formerly there was difficulty in getting one, and houses will not let at all. However, luxury was too great in London, and a more economical style of living may be an ultimate advantage. . . . I like to hear of all your club books You are reading much more than myself at present, for I cannot find time for it. My two last books might be too prosy for you—Sir Erskine May's 'Democracy in Europe,' and Lecky's 'History of England in the Eighteenth Century.'

February 17th, 1878.

Our anxieties are still great in regard to Russia, but I still fervently hope that two great countries will not be so idiotic as to go to war. But when two over-grown lads stand opposite each other, shaking their fists in each other's faces, a blow may come at any time. I fear that there is a large population in both countries that would welcome war. I am sorry to say that the House has decided to impose upon me the hardest and most responsible work of the Session connected with our domestic matters. Manchester has a large scheme for bringing the Lake Thirlmere from Cumberland to Lancashire for the purposes of manufacture. It is supposed that it will cost at least twenty-five millions of dollars. All the lovers of art are wild at the alleged desecration of the Lake District, which Wordsworth and

Southey have made dear to the country; but Manchester, having spent already half a million dollars in preliminary arrangements, insists on her views being carried out. We had one day's discussion on the subject in the House, which is excited about it as well as the public. It was resolved to refer it with powers to a committee of nine. Four of the committee are obliged to support or oppose the scheme—that is, four on one side and four on the other. The House had to find a chairman who could act as judge, and give the casting vote, after full investigation of the case, with strict impartiality. I am sorry to say that it has fixed upon me to be that unhappy individual. You can fancy me sitting for the next two months, day by day, from twelve till five, in a committee room crowded to suffocation. Probably twenty counsel with gowns and wigs will be there, examining and re-examining witnesses. During these sittings, every man is trying to find out from looks, expressions, or questions asked, to which side the unhappy chairman leans. As honesty is punished in this way I think I shall become dishonest and partial, and then I may be allowed to go my own wonted way. As there are some warm hearts at 135 that will think, "How will his health stand this close and anxious work?" I promise while it lasts to run down on Friday night to the Granville Hotel at Ramsgate, so as to get three nights of sea air, which always keeps me up to any amount of work. Besides, the whole thing is interesting and amusing. The most eminent counsel are employed on each side, and the unhappy witnesses give one an unceasing fund of amusement. I have already become as close as an oyster. Bright, Forster and others, who are intensely interested on opposite sides, Bright for the Manchester scheme, Forster violently against it, have been trying to open my shell to find out my leanings; but as the oyster is a stupid animal, they have not been able to discover whether he *has* any conceptions.

February 21st, 1878.

The House has given me a splendid committee to work with, so I am in good spirits, notwithstanding the prospect

of the work and responsibility. The committee consists of Sir John Lubbock, Lord Eslington, T. Brassey, Hon. T. Bruce, Mr Rodwell, Q.C., Mr Knowles, Sir Ughtred Shuttleworth, and Mr Salt, Secretary of the Board of Trade. It is usual only to put two men of such calibre on a committee, but every man on mine is a strong one. I hope that my hand is strong enough to drive such a team. Last night we had our great dinner (Edinburgh University) to the Marquis of Hartington. I was in the chair, and about one hundred and thirty Edinburgh graduates were present. I send you our bill of fare, to see what a Scotch dinner is composed of. It went off very well, and everybody seemed pleased. Froude, the historian, and Huxley made capital speeches. Lord Hartington quite entered into the spirit of it when I proposed his health as "our Rector Magnificus."

P.S.—I have just got your nice long letter of the 5th and 7th, enclosing the sketch of the snow-blocked house. I can scarcely conceive Boston in that sort of guise, for I associate it with its smiling gardens, and ponds with the swans and boats. Our peace prospects look considerably better. I have always thought that if there is a peace, Disraeli will bring on a dissolution by Easter in order to get another lease of power. If my constituents choose to elect me without a contest, as they have hitherto done, or carry on a contest at the expense of my party, I would stand again; but I have no vehement desire at all to remain in Parliament, and I certainly will not spend £2,000 in a contest if one is forced upon me. It would be a great relief to find that one could go anywhere when a little change of air is required, instead of being tied to London by incessant engagements.

THE GRANVILLE, ST. LAWRENCE-ON-SEA, RAMSGATE,
Sunday, March 3rd, 1878.

This will not go till Thursday; but, as my heavy work begins on Tuesday, I must be satisfied with sending you a postscript by the latest post. I came down here on Friday, and have had two such glorious days. The sun

has been so warm that it was impossible to put on the lightest overcoat. My persistent cold has all but gone, and my cheeks are what the 'Montreal Gazette' called "extremely florid." The old head waiter, who has just brought this paper, claims an old acquaintanceship. He knew me at an eating-house where I used to lunch twenty years ago; but he said he did not recognise me for some time, because I looked so much younger and better than I did in those days! There is some comfort for one's self and one's friends. . . .

I have just returned from seeing a wrecked vessel hauled in by a Ramsgate tug. It was wrecked in that gale in which I was in the *Britannic*. The crew abandoned her in boats—why, I do not know. She is a magnificent three-masted vessel, a German; and, beyond having lost her top masts, seems little the worse of her wrecking. It was difficult to haul her off from the shore, but here she is in the harbour all snug. We gave the wreckers three cheers on their success as they came into the harbour. Ramsgate is Ramsgate, and in itself not inviting. The shops seem all for shrimps and bread and butter with washy tea, a cup of which I tried.

Sunday evening. Instead of going to the church behind the hotel, I thought I would like to walk to Broadstairs, about two and a half miles to the left, fancying, as proved true, that I would get a quiet, rural church there. What a glorious walk it was! The sea quite smooth, the sky blue with only a white cloud here and there, the whole sea studded with ships, and the cliffs along which one walked going sheer down to the sea, so that you could have dropped a plummet into it. Broadstairs is a quaint old place in a pretty bay. The church first meets your eye above the houses with a genuine cock as a weather-cock—none of your mere gilt arrows. Is it true that this is only the third of bleak March? There are children at Broadstairs in full summer enjoyment. About twenty of them have made a circular fortress of sand, in which they sit to resist the advance of the inexorable tide. The sand of the walls crumbles away, and one by one the gallant

boys are swept out. I think that I must be young aga as the waiter says, for I enjoy so keenly the struggles one boy, who heaped sand upon sand on his walls lc after the others had given up, and when the sea was round him. At last, down came his structure, and little brother burst into tears, while the sea-warrior tc up a huge flint and cast it at the sea in rage. That i fellow to put on board a man-of-war like the *Revenge* Sir Richard Grenville, when he fought the fifty-th Spanish liners.

March 6th, 187

I sit daily as Chairman of the Committee on Manchester and Thirlmere scheme, and have some ho that we may get through it in a month, instead of t months, as we expected. All the room is hung rou with huge maps of the districts affected, each ten f square. The counsel, Sir Edmund Beckett, has j finished his opening speech, and as yet only two witnes have been examined. There are two camps, c utilitarian, the other æsthetic. One argues that the wa winds of the Atlantic, striking the high mountains, chilled, and deposit 150 inches of rain yearly in the La District, and that surely these great Lakes are destined the use of man, and ought to supply the large tow The Atlantic winds are common property, and accident of this deposition of rain cannot make it belc to a single locality. The others say beauty is so rare should be preserved, and is the property of all who v the Lakes, and that utility has nothing to do with The Lakes were destined to minister to the sense of beautiful, and those who would touch them are Goths a Vandals. The excitement is intense, and the lawyers reaping a noble harvest. All of them look to the p Chairman only, and, if his attention wander for a mome become silent till he listens. The strain, therefore, heavy. The room is incessantly crowded with comers a goers, who come in, stare at the Chairman, and specul as to which way he leans. The one side assume that h a utilitarian, and cognisant of the wants of mod

civilisation. The other side recollect that he was once Secretary of the Department of Art, and feel sure that his love of the beautiful will prevent his having low-born, base, mechanical views. Ruskin was the leader of this section, but he is seriously ill, and cannot as yet attend the Committee. The Chairman is a goose, and has no opinions, but cries, "Order! order!" occasionally, and puts a few questions, first on one side and then on the other, so that each party claim me as a supporter, and nod their heads approvingly to the audience sitting behind the counsel. He is not a man to be envied, and wishes himself at Jericho. As to his leanings, he has never told me, so I cannot tell you. All I know is that there is a jolly Parliamentary fight, and that some time or other he must throw up the glove.

March 8th, 1878.

I must begin my letters, at least, when I have odd moments, for I am a slave at the galley just now. I am head and ears over in Lake Thirlmere, and may be found drowned in it some day. As I suspected, all my Committee have betrayed their proclivities; but mine—if I have any—are still a mystery, so the counsel only care for me, and won't give me a moment of respite. The room becomes insufferable, and I turn everybody out for ten minutes at two o'clock, and open every window. In this way I get it tolerably healthy. . . . I have little news of the outer world, as I am never beyond the walls of my Committee Room.

Beach House Hotel, Westgate-on-Sea,
March 17th, 1878.

I came down here yesterday as an experiment. It is about twenty minutes' walk from Margate, and about a quarter of an hour by train from Ramsgate. I arrived yesterday in a bleak east wind, with occasional snow showers. My friend Colonel Bolton, who recommended the hotel to me, advised me not to go without telegraphing to see if there were rooms, as it was such a favourite hotel. I determined to risk it, and found myself the only

occupant of the large hotel. A man, however, came in to lunch. He had a hobby, which I soon found out, and set him on a trot. He was honorary secretary of a society for introducing falconry into this country again. What a glorious sport this was! And the nation could not be happy till it again became the national sport. He had come here to look at the marshland to see if there were herons enough to justify him in bringing down his hawks. Sea-gulls there are in abundance, and they give good sport, for the sea-gull (he informed me) is a dodgy bird, and when the hawk is just over him he closes his wings, drops fifteen feet, and the hawk misses him. He had been at the Curragh hawking magpies. That is fine sport indeed, for the magpie takes to a furze bush, and the hawk hovers over it in perplexity. Then the hawker goes up and cracks his whip, the magpie flies out, and the hawk pursues him. Then you get rabbits: you kick one up, and the hawk generally gets him after a short run. "Like all Londoners, I know you by sight, Dr Playfair. Why do you waste your time as you do? Education, sanitary matters, and Savings Banks, and such subjects as you take up, are all very well, but any novice can work at these. Come and be vice-president of our society for spreading the noble sport of falconry, and you will leave a name behind you. Now do. We have six earls and four baronets on our committee, but I am sure they will welcome you." But I thought of the poor magpie and the crack of the whip, and I was ignoble enough to decline the proffered honour. . . .

For my friends at home and for a few dear friends over the sea, I have good news, namely, that the Manchester and Thirlmere Committee ends this week. The Manchester people have squared most of their opponents, and a week of speechifying on the part of counsel will exhaust the subject. I think the Committee will pass the Bill. Lake Thirlmere is a small lake which once was much larger, but it wore away some rock, and the waters escaped. These degraded parts Manchester intends to fill up again, and thus restore the lake to its old condition. I

believe this can be done with an increase of beauty, and yet the waters which you send us—for it is the water of the Atlantic coming from America which is condensed on these islands—may be rendered useful for a great city. At least such, I think, will be my judgment, unless the speeches alter my views of the facts. . . .

On arriving to-day I got your nice long letter of the 5th March. Tell Mrs Sargent that both your and Alice's letters are charming, and that I enjoy them exceedingly. They refresh a poor Londoner with good, wholesome, American air. I was interested to hear that Mrs —— has joined the Church. Not that I think God cares at all to what church we belong, or that we are the better or worse for professing any creed. But the Church of England has a service admirably fitted for keeping up our spiritual life, and therefore I love it beyond all other churches, except, indeed, when it becomes fantastic, and tells you that God can only be worshipped by orientation—that you must look in a particular way when you say the Creed. At this my old Scotch Presbyterian training rises up in rebellion, and I find that I have a good deal of the Puritan left in me. 'The World' which you got is a paper which has established itself by its witty personalities in "Under the Clock." They have become vulgar lately, but formerly they were intensely witty. Once I spoke from below the gangway, sometimes addressing the Government, which I was opposing, and sometimes turning round to address the Irish members behind me. 'The World' wittily remarked that "this little man, midway between England and Ireland, looked like the Isle of Man lecturing Great Britain and Ireland."

HIGH ELMS, *March 24th*, 1878.

This Sunday I am spending with Sir John and Lady Lubbock, who are always glad to have me as I am glad to visit them. They live on a beautiful estate with lovely woods. This afternoon we had a charming walk with violets and primroses thick under our feet. It was a perfect spring day. Now, at five o'clock, everything is changed. It is blowing a strong gale, and snow is falling

so fast that I have to write by candle light.[1] This is the only real snowstorm we have had this year. I have fled from the drawing-room to escape double acrostics, which try my intellect and temper vexatiously. When I last wrote you, I congratulated myself that the famous Committee would last only a week. The week is past, and the minimum time of hope is now a fortnight more. I had hoped we might conclude by the 14th, when our Easter holidays begin. Of course, if we do not, it will be postponed till these are over. New evidence has come on, and the case for Manchester is worse than it was. Yesterday I lunched with Lord Granville. He tells me that Lord Beaconsfield states to Lady B . . ., to whom he entrusts all his secrets, that if he betted, he would say the chances of war and peace were quite even. This is idiotic when there is nothing to fight about. But if war ensue, it will serve the country right for having such a man as Prime Minister. On expressing this sentiment to a distinguished supporter of the Government in the House, he remarked, "Come, now, that is too bad; we prefer our scoundrel to your maniac."

PARIS, *April 29th*, 1878.

To-day the Prince of Wales asked me to breakfast with him at 12 o'clock at the Café de la Paix. The Duke of Sutherland and some French dignitaries and artists were also there—twelve in all. It was a very pleasant party. I made them laugh very much by reciting my experiences in the Washington Lunatic Asylum. After breakfast, about 3, the Prince dismissed his guests, and asked me to join him in the carriage, and go with him in his round of calls. He had a one-horse brougham, and no servant, so we got round very quickly without his presence being known. We have only two days in which to get the Exhibition in order—that is, to convert chaos into order. England will be most creditably ready. America, I am sorry to say, is far behind. Belgium and Holland stand next to us in readiness, but France and the other States

[1] It was in this gale that Her Majesty's ship *Eurydice* foundered off the Isle of Wight.

are nowhere. I put on the screw very hard when I came; but the Prince, Mr Owen (the Executive Commissioner), and even the exhibitors, all now admit that my arbitrary proceedings have produced the desired results.

PARIS, *May 2nd*, 1878.

Your letter of the 15th April reached me to-day, and I was very glad to get it amid the excitement of the Exhibition. There has been little rest for me. Some nights I have been up till three in the morning, and up again at work at seven. Yesterday the Exhibition opened with about the most ill-arranged ceremonial I ever witnessed. In the middle of it, a thunderstorm with deluges of rain came down, and the ladies' dresses were frightfully damaged. Our party was out of all this, for I had asked the R . . . s to the Prince of Wales's pavilion, and we were under cover. When the procession of the Marshal and Royal people came past, followed by the disorderly suite, they saw everything excellently out of a window appropriated to them. I took Miss R . . . for a walk in the building, and I think her little Republican feeling was astonished by finding all the sentinels and policemen salute us as we passed. She could not make it out. It was in reality in compliment to the decoration of Officer of the Legion of Honour which, among others, I wore. The Exhibition will be a fine one when it is finished—indeed, the English section is very fine already. The pottery especially and the Indian collection are magnificent.

PARIS, *May 5th*, 1878.

This is the last letter from Paris, for I intend to leave to-morrow, thoroughly tired out with the work and gaieties. On Saturday we had a splendid dinner given by the exhibitors to the Prince of Wales. It was in the Grand Room of the Louvre Hotel. There was a cross table at the top for the dignitaries, and three long tables down the hall. The flowers, plate, and decorated company really made it a splendid repast. I had pleasant neighbours—the Prefect of Police, Sir Richard Wallace, the great art collector, and

the Duke of Sutherland. Lord Granville presided, and the Prince of Wales made an excellent speech. The only unofficial speakers were the Prince, Lord Granville, and your obedient servant. I proposed the British exhibitors, who, in fact, were also our hosts. I do not like public dinners generally, but this one I did like, for the Prince did his part so admirably, partly speaking English and partly French. . . . I took Princess Louise and Lord Lorne through the Exhibition to-day. She was very pleasant and agreeable.

May 31st, 1878.

I have just returned from the most charming dinner at Mr Goschen's, the late First Lord of the Admiralty. The dinner was given to the Crown Prince and Princess of Germany. I got into the most animated conversation with the Princess on German politics. I found her full of her old Liberal sentiments, but frightened at the growth of Socialism. I tried to convert her by pointing out that Socialism began in France but it has nearly died out, and I begged her to read Harrison's article on the subject in the last 'Fortnightly.' She was most pleasant and friendly. We had many friendly reminiscences, and I enjoyed the dinner much. Though I took George Eliot down to dinner, she never found out my name till the end. Then she became gushing, and said she had lost the evening, and asked me to go and see her often. However, we had spoken a good deal, and she was quite as clever and agreeable as I expected to find her from her novels. She was much interested with some of my American experiences, especially with the lunatic lady at Washington who took me in so completely.

HÔTEL DE SUÉDE, BRUSSELS, *May 3rd*, 1878.

I started yesterday by the *Baron Osy* from St. Katharine's Wharf at 12 o'clock. I am very fond of a sail down the river with its forests of masts. Your 'New York Herald' telegraphed that the centre of a great cyclone was to pass

over the British Islands to-day, but we had a lovely passage. All steamers spoil me. I had a beautiful state cabin reserved for me at the usual fare of 24s. There seemed to be various nice passengers, but I devoted myself to an old lady, who seemed to me to need protection. It turned out afterwards that she was not alone, for her daughter and maid were both ill in the cabin below. A very handsome young lady appeared this morning at 6 o'clock, when we reached Antwerp, and thanked me for my attention to her mother. She was the Hon. Mrs S———, so I suppose belonged to the ducal family. I sometimes make mistakes in taking compassion on neglected ladies. Once at a party I saw an old lady on a sofa, apparently shunned by everybody, so I went and sat down beside her, and we got quite friendly. I found that the lady upon whom I had taken compassion was the Dowager Duchess of B——— ! On arriving at Antwerp, I took a walk before breakfast, saw the cathedral, which they are repairing excellently, the Calvary, the Church of St. Paul with its fine wooden carvings, and the house of Rubens, with some good Vandykes, one of which—the Virgin and Child—pleased me most. Then I went to the hotel to breakfast, and taking up a newspaper was shocked to see of the new attempt to kill the German Emperor. I think I told you how sad the Crown Princess was about the state of things. She said there were two great causes of anxiety, and they were undermining the situation—(1) Socialism, and (2) the dependence of all Germans on the State. This attempt at murder seems to have come from both causes. The assassin was disappointed because he did not receive an appointment from the State, and he attended Social Democratic assemblies.

ASCHERSLEBEN, *June 11th*, 1878.

I had a most charming excursion in the Hartz mountains after early service on Sunday. We took a carriage and drove fourteen miles into the chief valley of the mountains. Nothing could be more smilingly beautiful than the drive.

The whole valley is carpeted with green, and the mountains on each side are wooded to the tops. Birds carol right and left of you, and huge falcons poise over the forests, watching for their prey. On the top of the hills an occasional castle belonging to some Graf or Herzog just pushes its roofs above the woods. As the valley proceeds there are resting-places where large inns have grown up, and in one of these we dined at a *table d'hôte* of about forty people. I sat next a queer old man, who proved to have resided thirty-five years in the valley as modeller to some ornamental iron works. Well, this old German artist was delighted that I knew his modelling through the iron work at my friend's home, so off he went to the Herr Direktor of the Works, and that great personage asked us to take coffee with him. His wife and children were very nice; the latter, two boys and a girl, took possession of me, and showed me all their treasures. There was a young lady who talked very pleasantly, and was apparently the sister-in-law. An hour later I was surprised to see her behind the counter of the shop selling their iron wares. Then we drove in the Herr Direktor's carriage further up the valley through some charming scenery until we came to a Cur-Ort, or congregation of hotels and saloons—a sort of miniature Homburg. It was amusing to see the patients and the lovers. One tall, handsome girl was walking deliberately through the grounds with her arm around her betrothed's waist, while he satisfied himself with resting his elbow on her shoulders and smoking a huge pipe. Another young lady, in green velvet and very open dress, with an "idiot fringe" on her brow, was smoking a cigarette while her adorer lay at her feet playing with the huge buckles of her shoes. The whole scene was very German, and amused me exceedingly, and so I send it you, with much love to my Nahant friends.

WOHLFAHRT, *June 15th*, 1878.

I am here on the top of a mountain 2,500 feet high, altogether unapparelled for such work. I knew that I had to go by rail for four hours, then by carriage for two hours,

then by climbing for one and a half hours. But it *can* rain in the Eifel. In five minutes my shoes were squeezing out streams of water, and I arrived like a drowned rat at the top of the mountain. Here, however, I found wonderfully good quarters in a house built by the Company. However, the manager, his wife, and a nice daughter of nineteen, were full of kindness, and they managed somehow, with miners' clothes, etc., to give my friend Mr Schmidtman and myself dry clothes till our own were put on the stove and dried. To-day it is raining worse than ever, and I have struck work and remained in the house while Schmidtman has again gone down the mines. . . .

The manager of the mines has only £150 a year. He is a model man for his position. Now he is comfortably housed, but when he came here his quarters were awful. But his wife finds happiness in everything, and confers it on all around her—even the weather contents her. She has four children. The eldest, twenty-one, is a teacher of French and German in some German town. The second, the Fräulein here who waits on us, is a neat, pretty, happy girl of nineteen, who speaks English *schlecht*, but French *vorläufig*. The two boys of sixteen and twelve are at school in Belgium. All this out of £150 a year is marvellous. Everything around you is neat if not elegant, and scrupulously clean. As if they had not enough to do with their money, they have adopted two children of a brother-in-law who died here three months ago, I fear from the hardship of getting the works in order, for he had to be for whole days up to his waist in water. The two little orphans came in to me this morning. A little girl of four took hold of my hand and said, "Mein Vater ist gestorben." "Ja. Das macht mich traurig." "Aber du wein'st nicht für meinen Vater." "Nein, Liebchen, ich würde für ihren Vater weinen wenn ich ihn zu leben bringen könnte." The other, a year older, told me her mother had gone to see some relations, to see whether God, in His great goodness, had sent a message from heaven that they should help those who were left when God called their father to heaven. They wanted to

know why God had called him. Had He any mines there which He wished to be worked? And would the father have drier gangways to work in than he had at Wohlfahrt? I told her that God would give him plenty of work, for though hell might be a place of idleness, heaven must be one of work. I thought, however, that he might have less hard work than as a miner. However, I found that I had not brought consolation, for when I suggested that possibly he was not working in mines in heaven, the little child became sad, and said, "Ach Gott! denn ist er nicht mehr glücklich." I gave it up, feeling that religious consolation was not my forte. . . . I think you may like to hear that on representing the case of the orphans to some of my co-directors, I have got up a subscription of $150 for them—nothing very great, but which the mother will think much of.

LONDON, *July 7th*, 1878.

To-day I had a delightful afternoon with the Hookers of Kew. Sir Joseph and Lady Hooker are giving three large garden parties at the Royal Gardens. They received us in a tent where refreshments were served. All the scientific notables were there. When I told him that I had taken my passage for America, he envied me very much, and said that he would like to visit the kind Russells at Nahant. . . . There was a phonograph in one of the rooms in the house, and there was a good deal of fun in making it speak. This morning I spent two hours with Lord Granville. He was rather dismayed at my going to America, and is not at all sure that there will not be a dissolution in my absence, but I quieted him by the assurance that I would try to be back early in October.

July 26th, 1878.

Yesterday I dined at the St. Stephen's Club with Mr Raikes, the Chairman of Committees. After dinner I went in to the Dean of Westminster's. There I found a very small party, but they appeared to be all clergymen, and I found myself like a fish out of water. Looking about for a

layman, I saw a desperately black negro, with superb white teeth. So I thought I might get something out of him. He spoke perfect English, and was quite a gentleman. He told me he had been a fortnight in England, and enjoyed visiting it very much, for his own country, Bonny, was very uncivilised. I asked him if he were a missionary, on which he smiled and said he employed missionaries. "Then," said I, "have I the honour of speaking to a native Bishop?" Upon which he said with perfect courtesy, smiling, "Dr Lyon Playfair's name is familiar in Bonny, but mine does not seem to have reached England." "Excuse me, sir," I said, "but I addressed you as a stranger, and I have not the advantage of knowing your name." Upon that my cultured negro replied, "I am the King of Bonny, and I have come over here with my Prime Minister to furnish myself again with a little of your civilisation." So I had a long talk with him. He said that to cultivate the society of English gentlemen was, after all, more pleasant than having his subjects crawling up to him on their stomachs, for he found it both dangerous and difficult to introduce civilisation too fast in his extensive kingdom. He asked me about the microphone and the phonograph, and was obviously a most enlightened potentate. His age seemed about twenty-eight. In another part of the room I saw another negro, quite as black as my shoe, and apparently as well polished. So I went to him. He, I found, was the Bishop of Hayti. He told me he had gone to Hayti with a hundred American negroes. The climate did not agree with them. In a year he buried forty, and, grinning with his white teeth in a way that looked like a smile, but I suppose it was not, "five of them were my own family." He told me he had eight churches and four hundred communicants. He was quite a cultivated man, having been educated in an American University. So having been successful with two negroes, I tried a third. He proved to be the Prime Minister, and talked good English also. He was not so polished as His Majesty, but gave me interesting information about Bonny.

SEACOX HEATH, HAWKHURST, *July 29th*, 1878.

I am staying here with Mr Goschen, who has the most lovely place in Sussex, not far (three miles) from Hastings. The scenery is the perfection of English landscape, with undulating hills and wide plains richly wooded. The house is quite palatial in the size of the rooms, and the central hall is square, with two galleries, one above the other, running right round. I am in a bedroom on the upper gallery, and have an English landscape from my window from which I have always fresh enjoyment. Sir Rowland Blennerhasset, a Catholic landlord, is the only guest besides myself. He is very learned in foreign politics, but I fear from my trivial character I enjoy more romping with the children than talking politics with the two politicians. I am sorry that Goschen has abandoned the idea of going to America as I could not promise to travel with him. Besides, the rumours of a dissolution revive again, and he thinks it hazardous to leave even till early in October. On Saturday I dined with about two hundred doctors at Greenwich. Many of them were Conservatives, and my friends among them doubted whether I should be well received. They were certainly a frigid assembly, and drank "The Queen" and other toasts in silence. I became frozen, and when my health was drunk I had congealed. But, to my amazement, the whole audience started up and gave me three times three cheers. The chairman, an ardent Conservative, then whispered, "All right; *your* seat won't be contested." However, even the cheers did not thaw me, and I made a very bad speech, but I agree with the president that my reception was very encouraging for the next election.

After his marriage to Miss Russell, Playfair and his bride returned to England from New York by the *Germanic*.

To Miss Alice Russell. S.S. *Germanic, November 10th*, 1878.

We expect to get into Queenstown to-night about 10 p.m., but as the sea is heavy and the ship rolling much,

Edith cannot write home. I fancy that her letter from Liverpool will reach you as soon as this from Queenstown. Our voyage has been prosperous though slow. Nearly all the winds have been favourable, but there must have been a serious N.E. storm in advance of us, for the sea was heavy against us for two days, and we had a good deal of pitching. Now it is with us, and gives the agreeable diversity of heavy rolling. In all seas the *Germanic* is a splendid vessel, rising and falling without jars or shocks, very much like a yacht.

I have purposely made free extracts from the correspondence between Playfair and the family of which he was about to become a member, because these letters cast a light upon his character and individuality which is hardly supplied by the records of his working life. To understand the secret of his success as an organiser and administrator, it is necessary to understand something of the lighter side of his character, the unfailing buoyancy of spirits which made him a welcome visitor in every home, the frank charm of manner which enabled him to win his way even into hearts that did not naturally incline towards him. Those who enjoyed his friendship knew what this charm of manner was; but it is only in such letters as those from which I have printed extracts that any traces of this characteristic are to be found by those who knew him not. In his business relations he was always intensely business-like. But in his social relationship, and even in the casual meetings with the chance acquaintances of the dinner-table, the severity of public life absolutely vanished, and he won his way into the goodwill of those with whom he came in contact, not merely by his admirable skill as a *raconteur*, but by that unfailing gift of sympathy which made everybody feel that he was a friend in much more than the conventional meaning of the word.

Playfair's marriage with Miss Russell in 1878 may be said to mark the commencement of the third term in his

life. From this time forth he went out more into general society, he entertained more largely in his own house, and, whilst as unremitting as ever in his devotion to public work, he became gradually more and more of a figure in the social as well as in the political and scientific life of London. He was still a man with many cares. He always had many irons in the fire. With all his devotion to his duties as a public man, he had also to fight his own personal battle with the world. Never wealthy, he was never able to dispense with the necessity of augmenting his income by his own exertions. His task of earning his own living he discharged with characteristic thoroughness. But it was always regarded by him as a secondary task. The best of his talents, the most conspicuous of his services, were freely rendered to his country. A passion for public work seemed to have possession of his soul, and, though he could enter into all the affairs of private business with which he had to deal with the thoroughness that characterised him in every department of labour, it was into those enterprises in which he was working not for his own but for the general good that he threw himself with the greatest enthusiasm. No one who knew him could doubt that these were the things which appealed most strongly to his heart. His marriage to Miss Russell provided him with a companion who shared all his enthusiasms, and who not only aided but encouraged him in his public ambitions. Through her he was brought into contact with the strenuous public and individual life of America; and, as has been said already, from the time of this marriage he combined with his English modes of thought and action much of the quickness and receptiveness which are the distinguishing marks of the best class of public men on the other side of the Atlantic.

CHAPTER XI.

CHAIRMAN AND DEPUTY-SPEAKER.

Playfair's Liberalism becoming More Pronounced—His Seat in Danger—Letters from Edinburgh. AUTOBIOGRAPHY: Appointed Chairman and Deputy-Speaker: Irish Obstruction: Suspending the Obstructionists: Resignation: Letters from Mr Gladstone, the Speaker, and Sir Stafford Northcote: A Reaction: Made a Knight Commander of the Bath: In Defence of Vivisection and Vaccination: Grand Committees. Why Playfair refused the Office of Chief Whip—His Suspension of Irish Obstructionists—A Correspondence with Mr Chaplin—The Absorbing Character of His Duties as Chairman—His Loyalty as an Independent Member—His Personal Popularity with the Irish Members—Securing a Knighthood for Professor Owen.

THE political situation from 1876 onwards till the General Election was anxious and disturbed. The great struggle between the foreign policy of Lord Beaconsfield and that of Mr Gladstone was at its height. The country was passing, in Eastern Europe and in Asia, through successive crises which on more than one occasion brought it to the very brink of war. At home men's minds were disturbed by the fierceness with which the conflict between the two great leaders of the day was maintained. Playfair, although he had stood carefully apart from the ordinary struggles of parties, in obedience to his conception of his duties as member for the Universities of Edinburgh and St. Andrews, did not conceal his warm sympathy with Mr Gladstone's views on the Turkish Question. It may be gathered, indeed, from the letters published on previous pages, that his Liberalism was becoming more pronounced with the passage of time. It was always a sane and sober Liberalism, moving upon the old historic lines, and

conspicuously free from any sympathy either with the Socialism which was making itself felt in certain advanced democratic circles, or with the "fads" of organised cliques, who were at this time very busy, more especially in the ranks of the Liberal party. But although he was then, as he continued to be to the end of his days, the object of the bitter hostility of Socialists, anti-vaccinators, anti-vivisectionists, and many active and powerful sections of the Liberal party, he made it clear to the world that on the great questions of the time he was in full sympathy with the doctrines of Liberalism as he had known them from his early manhood upwards, and as they were now represented by Mr Gladstone.

During 1878 and 1879 rumours of an impending dissolution were constant, and, along with these general rumours, others more particularly affecting himself reached Playfair's ears. He learned that his Liberal opinions were becoming increasingly distasteful to many of his constituents, and that his seat for the University was seriously threatened. With his usual alacrity he set himself to the task of measuring and meeting the opposition which he had thus to face. He went to Edinburgh in April, 1879—as it happened, just a year before the dissolution took place—in order to grapple with the situation on the spot.

Playfair to his Wife. EDINBURGH, *April 11th*, 1879.

I have little to tell you. I found, as I suspected, a good deal of irritation among the medical men here. They thought that I was not earnest enough about the Medical Bill. Why, I know not, unless the Tory M.D.'s have been making capital out of this feeling; for the Bill has not yet been introduced into the Lower House, and in the Lords it was not my business to interfere. However, I am smoothing their ruffled feathers fast, and the M.D.'s have asked me to dine with them on Monday at six, so I hope to complete the pacification. I have interviews all day

long, so have no general news to tell you, as you would not care for *précis* of conversations on conjoint boards and on vivisection. The general impression is that my seat will not be attacked. I am just going out to return calls; but it is now 3.30, and I have had no air or "Good Friday," for I have been interviewed all day by M.D.'s and advocates.

Same to the same. ST. ANDREWS, *April 12th*, 1879.

I arrived here all right about the middle of the day. Then I went to lunch with Bob Mitchell, and spent the afternoon calling on professors. They are all angry because, as a University Commissioner, I did not raise all their salaries to £600 a year. I said that truly I was a Commissioner, but I was only one of many. Besides, twenty professors at £600 per annum from the State meant $600 \times 20 = £12{,}000$, and that divided by their 150 students meant that they asked the State to pay £80 for each student out of Imperial funds! However, they are very cross, and think I could remove mountains, and that I did not fight for them enough. However, I have laughed and quizzed, and hope they are a little ashamed. . . .

I intend to have a little fun to-night. There is at the "Cross Keys" a *Gaudeamus* or farewell dinner of the "Classical Society"—that is a debating Society of Students. I used to belong to this society, and when I left college I was made an "Honorary Member" of it. So I intend after dinner to offer to drink a tumbler of toddy with my old society, and beg to be admitted. They do not know that I am in the hotel, and will be astonished. So far as I can find out there is no real purpose of opposition here, though the professors are rather grumpy at me because, as a University Commissioner, I did not make an ass of myself.

Same to the same. ST. ANDREWS, *April 13th*, 1879.

I have just come from church, and rushed here for shelter from the most pelting snowstorm and bitter easterly wind. The sea is raging finely in front of the windows, and makes

me feel gruey at the thought of having to cross the Firth of Forth to-morrow morning. Last night I spent with about fifty or sixty students at the *Gaudeamus* of the Classical Society. They were greatly pleased at my offer to go down. After my speech, they rose and sang

"For he's a jolly good fellow,
For he's a jolly good fellow,
Which nobody can deny.
Hip, hip, hurrah!"

I sat with them till ten, then proposed the health of the chairman and departed. All stood up as I left, and gave me three times three. There was capital fun—good songs and an excellent sermon by one of the students to the text of "Old Mother Hubbard." Remind me to tell you of this sermon, which kept me in a roar of laughter all through its delivery.

I have seen but few people yet. The professors either keep out of the way or they do not know where to call, and the weather is too inclement to find them outside. I dine with the Graces to-night, and shall probably have Principal Shairp or some other dignitary there.

Same to the same. *April 15th*, 1879.

I should reach you about a quarter to eight on the same day that you receive this. Yesterday I dined with about seventy medicals from all parts of Scotland. When my health was proposed there was strong thumping from a few devoted adherents, but an ominous silence in the body of the hall. I made a long speech, and at the end everybody was enthusiastic, and I found that I had won. It is quite clear that the enemy has been persuading the M.D.'s that I am an opponent of their views about the Medical Bill, while in reality I am a strong supporter of theirs. The meeting last night did me much good. The Principal still seems grumpy, for he has not been to see me. I went yesterday to call on his wife, but she was not at home. However, I have done my work pretty well, and am in a much better position than when I came here. I have

found out that the two men, Prof. Lister and Dr Matthews Duncan, whom the Conservatives asked to oppose me at their expense, have positively declined.

Having done what he could to make himself secure in his seat, Playfair waited patiently until the actual dissolution came, and he found himself in the field confronted by a formidable opponent who had the support of the Conservatives and of those medical men who were displeased with their old member's attitude towards certain measures affecting their profession. He went to Edinburgh in March, 1880, prepared to fight to the end for his seat in the House of Commons. He was soon joined by his wife, who remained with him during the contest. Before she arrived in Edinburgh, he had written a letter to her, which affords a passing glimpse of the historic episode of the Midlothian campaign. The letter is written from Dalmeny, where Mr Gladstone was staying with Lord Rosebery.

Same to the same. DALMENY, *March 21st*, 1880.

I wrote you a short letter from Silverknowe to-day, and now must tell you about my Sunday stay here. We had twenty-two to dinner yesterday—Gladstones, Moncrieffs, the Youngs, and various barristers and their wives, also Mr Donaldson, who wrote those letters in my favour addressed to teachers. Lord and Lady Rosebery were very pleasant. I took young Mrs Moncrieff in to dinner, and she sat next Mr Gladstone, so we had a pleasant conversation together. Gladstone looked jaded, but his work has been immense. To-day he looks much better. The Gladstones went in to church, and I took a five-mile walk with Lord Rosebery, and we made satisfactorily to ourselves the new Cabinet, if the Liberals get into power—no doubt widely different from that which will really be formed. Then he drove into town, and I went to the ———'s, expecting lunch! But

they live in such a primitive fashion in the winter, with one woman, that they could only give me a biscuit and a glass of sherry, so that I am now looking with interest to the dinner, which will be in half an hour. I had a long talk with Gladstone this afternoon, and he is full of hope for the Liberal party.

Don't you think you could join me for a week ? I dare not leave the field of battle. The enemy is looking round in all directions, and it would be utterly unsafe to rely on my strength until it is absolutely secure. The voting papers will be posted at the end of this week, and I must myself see to all this being done well. The nomination is a mere formality, but the issue of the voting papers and the return of them is a stern reality. Until 2,600 voting papers are actually in the safe, I am not absolutely safe. Of this number 2,300 are *promised*, but I have to get the promises in and 300 more votes somehow.

AUTOBIOGRAPHY CONTINUED.—X.

1880 to 1882.

I NOW come to a stormy period of my Parliamentary life. In the spring of 1880 there was a General Election. I was again returned as member for the Universities of Edinburgh and St. Andrews, after a hard contest with Mr Bickersteth, a medical man from Liverpool. The result of the election was that Mr Gladstone had a large Liberal majority. In forming his Government, Mr Gladstone was anxious that I should become Patronage Secretary of the Treasury, and Lord Granville and Lord Wolverton were deputed to induce me to accept this office. Its duties are better known by the conventional phrase of "first Whip," though that really does not explain them. He is an intermediary between the supporters of the Government and the Prime Minister, and must be in constant touch with both. It has always been a characteristic of Mr Gladstone that if he is convinced of the honesty and

straightforwardness of his first Whip, he is perfectly unreserved, and places the most entire confidence in him. The party as a whole are, therefore, much interested as to the person who is to obtain this post. I was much surprised that it was offered to me, because my relations with Mr Gladstone, though always polite and courteous, had never been intimate. It was impossible that he should forget how often I had been in opposition to his measures. Lord Granville and Lord Wolverton, however, assured me that Mr Gladstone was anxious that I should accept the office. But as I did not think myself adapted to fulfil its duties, I positively declined, and Lord Richard Grosvenor was appointed. Soon afterwards I was offered the office of "Chairman and Deputy-Speaker of the House of Commons," and, in an unhappy hour for my own peace of mind, I accepted it. The Chairman presides technically over "Ways and Means," but also over the whole House after a Bill has passed the Second Reading and goes into the Committee stage. He is not subordinate to the Speaker, who has no control over him. If he rule wrongly, there may be an appeal to the House, but not to the Speaker. In his capacity as Deputy-Speaker, the Chairman takes the Speaker's chair during the latter's absence, and exercises all his power.

When I assumed office Ireland was in a disturbed state, and Irish Members had elaborated their tactics of obstruction to all Government measures. This was effected by endless discussion on trivial clauses of Bills and by incessant motions for adjournment. These obstructive tactics were used whether the Speaker or the Chairman presided. The Speaker holds an office of great dignity, sits on a throne dressed in a robe and court dress, wearing a large wig, and having before him the mace of the House, a mace which has remained there ever since Cromwell said, "Take away that bauble!" Though the Chairman exercises the authority of the Speaker, everything shows his minor importance. The Chairman sits beside the clerks, dressed in plain clothes; while the mace, denoting the authority of the House, is placed under the

table whenever he presides. The two presiding officers of the House are, therefore, placed under very different conditions of dignity, and, although equal in power, are by their surroundings differently situated for its efficient exercise. At this time, Mr Brand, now Lord Hampden, was Speaker, and filled the office in the most dignified and efficient manner.

As Irish obstruction increased during the progress of the Parliament, both the Speaker and the Chairman received the constant censure of the Press for not being more arbitrary in the exercise of their power. The work, however, chiefly fell upon me, because obstruction generally was carried on in Committee of the whole House. The Chairman was more easily attacked than the Speaker, and he became the subject of incessant attack by the Press, which no doubt represented the indignation of the country at the friction of the Parliamentary machine. My censors were varied in their attacks. Sometimes I was supposed to be too lenient, and at one time it was even alleged that I had a secret understanding with the Irish members.[1] At other times, I was censured for being too arbitrary, for it seemed clear to the newspapers that I was trying to drive the members from Ireland into open rebellion against the rules of the House. It never seemed to occur to our critics that the rules of the House were at fault, because of their insufficiency to meet obstruction, and that the Speaker and the Chairman had no power to make rules, but could only administer them according to precedent.

The work of a Chairman may be understood when I state that at that time I had to be in the House every morning at eleven o'clock to preside over the Private Bill Legislation of Parliament, and that I rarely left it till between two and three o'clock next morning. When the "Protection of Person and Property (Ireland) Bill" was under

[1] The origin of this belief was that during a division I was seen to be in conversation with Mr Parnell and other Irish members behind the Speaker's chair. The fact was that Mr Parnell had asked me whether I considered the repeated motions for adjournment were an infraction of the rules of the House, and I replied that I did so, and would suspend those members who continued them. He then abandoned them.

discussion in February, 1881, obstruction rose to a height which required the full powers of the Speaker to suppress it. Hitherto the rule regarding obstruction had been applied to individuals only, but not to a combination of members acting in concert. Both Mr Brand and I agreed that we might give to it this extension, and the former announced from the Chair on the 1st February that he might be compelled to act against the whole body of obstructionists. On that occasion there was a whole night sitting, and the Speaker, being exhausted with the previous day's labour, left me to preside as Deputy-Speaker during the night. I promised him that I would not act under this new interpretation of the rule till he returned to the Chair next morning. The Conservatives tried to force my hand all through the night, and because I would not suspend the offending members *en bloc*, the Opposition rose in a body and left the House to show their disapprobation of my conduct. Next morning the Speaker returned as arranged, and suspended the whole body of Irish obstructors. The first application of this new interpretation of the rule ought clearly to have been made by the Speaker, as the presiding officer of the highest dignity. Even then it was thought to be an unconstitutional proceeding, but it was absolutely necessary to prevent Parliament being made the laughing-stock of the country. The action of Mr Speaker was challenged in the House, but was confirmed. (Hansard, cclviii., 21.)

In the following year, July, 1882, it became my duty to carry out this extended application of the rule against obstruction, when the "Prevention of Crimes (Ireland) Bill" was under discussion in Committee.

The House had become most impatient. The Home Secretary (Sir W. Harcourt) and the Leader of the Opposition (Sir Stafford Northcote) had been pressing me to close the discussion by the application of the rule for some time before I did so. The House was sitting continuously night and day, apparently with the hope of tiring out the Chairman by physical exhaustion, for Irish members went away in what were called "sleeping gangs," to return

refreshed for the continuation of obstruction. I gave three distinct warnings that I must suspend the whole of the Irish obstructive members if these tactics were continued. At nine on the morning of the second day, Mr Biddulph rose and asked "whether the time had not come to bring this farce to an end?" To this I replied as Chairman: "I have been painfully impressed for some time past with the manner in which this Committee has been conducted for twenty-three days, and on this particular clause for nineteen hours. The House has committed to it the examination and amendment of the Bill, but a limited number of members have systematically frustrated the progress of business by a mass of amendments, some of a practical and fair character, but by far the greater number only intended to raise under new forms questions which had already been decided by large majorities of the Committee. These amendments were made the occasion for endless repetition of the same arguments, and for irrelevant talk, deliberately planned to waste time. I think that the period has now arrived when, if the Committee is to carry on rationally and fairly the duty entrusted to it, the Committee must protect itself by the rule of the House intended to meet obstruction. I must express the sense of the Chair that deliberate and planned obstruction exists in the Committee, and I may soon have to indicate the names of members who, in my opinion, are engaged in systematic obstruction."

Notwithstanding this distinct warning, the game went on as before, and at last I rose and named sixteen of the most prominent obstructionists, who were accordingly suspended, and by five o'clock on the same day the Bill finally passed through Committee. Though I had followed carefully to the minutest particulars the precedent established by the Speaker in the previous year, and had certainly displayed continued patience and command of temper, I was assailed by the Press in unmeasured terms for my arbitrary conduct. The Cabinet said they could no longer support this interpretation of the rule; although it was Mr Gladstone himself who moved the suspension of twenty-eight members

in one resolution the preceding year. Curiously enough, the members who were most kind to me on this occasion were the very men whom I had suspended. Both by private letter and by speech in the House, the Irish members expressed their strong confidence in my fairness, patience, and impartiality. My action certainly scotched obstruction, and it has never again since then manifested itself in this acute form. But my position as Chairman had become intolerable, and after receiving warning from a serious illness that I could not safely continue such heavy work, I privately intimated to the Prime Minister that I would resign at the end of the Session. As much criticism of the performance of the duties which devolved upon me in these troublous times of Parliamentary history has been made, it may be useful to give the opinions of the three most competent witnesses, the Prime Minister, the Speaker, and the Leader of the Opposition, Sir Stafford Northcote. The first letter is from Mr Gladstone.

Mr Gladstone to Playfair. DOWNING STREET, *July 4th*, 1882.

MY DEAR MR PLAYFAIR,—I had hoped to speak to you in the House, but as you are wisely kept at home I cannot refrain from writing you a line of sympathy and just acknowledgment. I am not surprised that you should to-day find a little rest to be necessary. I am only astonished that you have been able to bear the strain so long.

With an office of less authority than the Speakership, you have had to discharge duties (all things taken together) perhaps more difficult, certainly more harassing. It can be no wonder if disputes at length arise upon some point in the proceedings. The marvel to me has been the calm temper, the indefatigable application, the close and acute discernment which you have applied to your work.

It seems to me that, apart from considering this man or that, the burdens of your office are becoming such as to pass beyond human endurance. Only the most drastic and searching reforms in the rules for transacting business

can, in my opinion, save either it or the Chair, or the House itself. On no account trouble yourself to answer this, but, believe me, with sincere regard,

Faithfully yours,

W. E. GLADSTONE.

The above letter was written soon after the suspension of the Irish members, and still warmer letters were sent when in August I intimated my intention to retire; but these are marked "Private and Confidential." As there was an autumn Session the public were not let into the secret till February in the following year (1883), and then, in the usual courtesy, I told the Leader of the Opposition. The following is his reply :—

Sir Stafford Northcote to Playfair.

20, ST. JAMES'S PLACE,
February 23rd, 1883.

DEAR MR PLAYFAIR,—Many thanks for writing to me. I shall take care to be in my place when you make your announcement. I am sure there never has been a Chairman upon whom harder or more unthankful tasks have been imposed than those which have fallen to your lot; and I hope that the House will duly express its appreciation of your labours.

Believe me,

Yours very faithfully,

STAFFORD H. NORTHCOTE.

The Speaker and I were cordial friends all through this difficult period. He invariably supported me in the House, and in communications to the Cabinet and to the Opposition. The following letter is the last of many which I received from him :—

Mr Speaker Brand to Playfair.

GLYNDE, LEWES,
January 5th, 1883.

DEAR MR PLAYFAIR,—I hear from Mr Gladstone that he has it in view to nominate Sir A. Otway to the Chair which you have so well filled in difficult times.

I cannot let the occasion pass without once more saying how sorry I am, both on personal and public grounds, to lose so efficient a helpmate. I still hope to see you serving the State in some higher and more congenial position.

Yours truly,

H. BRAND.

On my resignation the House passed with its usual kindness a complimentary motion, but I have little doubt that it, as well as I, was relieved by my resignation at that time. A curious reaction followed my retirement. For a considerable time I became one of the most popular members in the House, for whenever I rose in the course of a debate I was warmly cheered by all parts of the House, including the Irish section. This might be explained in two ways, either that the House felt it had done me scant justice when I sat in the Chair, or that it felt relieved by the absence of my arbitrary rule. In either case I simply record a fact which was a good deal noticed at the time.

This year the Queen, on the recommendation of Mr Gladstone, appointed me to be a Knight Commander of the Bath. As a mark of Royal favour, in order that I might wear the decoration and assume the rank of Knight on her birthday, the Queen conferred the honour by Royal Warrant and without the usual accolade.

As soon as I was released from the duties of the Chair I again took an active part in social questions. In this year, 1883, there were two determined attacks on vivisection and vaccination. I have already referred to the former subject in mentioning the Bill introduced by me in 1876 to regulate vivisection, which it was now sought to repeal. The attack on Compulsory Vaccination was still more determined, and, on the 19th June, 1883, the Government were so alarmed by the opposition that the Cabinet decided to leave it an open question. The epidemic of 1871 had been pandemic, probably as a consequence of the Franco-German war, and this weakened confidence in the protective power of vaccination. It is quite true that the Vaccination Acts are

not sufficient to resist a great epidemic wave, but they act as a breakwater and lessen its force. Great epidemics are like huge tidal waves, which may roll over any ordinary embankment.

It must be borne in mind that these embankments are never wholly continuous, for the unvaccinated are like holes in them, through which the flood of disease finds its way. Vaccination is, under ordinary conditions, a sufficient protection, but in the presence of a great epidemic it is overtopped, and small-pox spreads over a country, attacking the unvaccinated, and those whose protection has been worn out by age. As it increases in volume the vaccinated, too, are carried away by it, but vaccination is their life-belt, and they rarely perish. It was so in Scotland in the great epidemic of 1871. When such an epidemic strikes a population they become terrified, and they rush in crowds to be vaccinated. At that time the compulsory law had only existed for eight years in Scotland, and only the infant population had come under its influence. But still the people of Scotland, not being cursed with anti-vaccination societies, rapidly extended vaccination among themselves, and stamped out the epidemic. Since then small-pox has scarcely existed in that country. For the last few years the total number of deaths have not exceeded ten per annum.

In examining the state of vaccination we must compare the mortality from small-pox with that of the last century, This, Dr Farr tells us, was 3,000 per million of the population annually for the whole country. For the first forty years of this century vaccination was promoted among the people by charitable agencies, and the mortality had fallen to 600 per million by 1840, or was then only one-fifth the rate of last century. Still, 600 per million is a high rate of mortality, and Parliament began in 1841 to give funds for gratuitous vaccination, so as to spread it more rapidly among the people. This continued till 1853, and the mortality was now 305 per million, so that gratuitous vaccination by the State reduced the mortality to one half. Then, in 1853, Parliament passed an obligatory law, which

remained without administrative means of enforcing it till 1871; but still, during this period of obligatory vaccination, the mortality fell to 223 deaths per million. In that year a law was passed making it compulsory on Boards of Guardians to appoint vaccination officers, and since that time the average mortality has been 156 per million. Every successive step, then, in promoting vaccination has been followed by a great reduction in the rate of mortality. Voluntary efforts reduced the mortality of the last century from 3,000 to 600 per million, gratuitous vaccination by the State reduced it to 305, obligatory law inefficiently administered reduced it to 223, and the same law under vaccination officers further reduces it to 156.

Against such facts as these the opponents of vaccination asserted that the compulsory laws were a violation of personal liberty. To this I replied in my speech as follows:—

"We have many laws interfering with personal liberty. We restrict hours of labour to working men, although many of them think our restrictions unjust. We punish the rash traveller who jumps into a train in motion, although it would injure no one but himself. If small-pox affected an adult individual only, his right to take it could scarcely, however, be disputed. We do not punish a man for burning down his own isolated mansion if no one is injured but himself. But we do punish him if he risk a neighbour's property by his act. Every case of small-pox is a new centre of contagion. A man may exercise his own personal taste for any disease which he chooses, provided he does not injure his neighbours by his idiosyncrasy. But when he produces omissional infanticide of his own and his neighbours' children by neglect of duty, the State may intervene to protect the young population from a fatal and mutilative disease. This disease is just as fatal and hideous as it was in the last century, but it has been controlled by wise and beneficent laws. Will you allow the country to slip back to the period of voluntary vaccination, and disseminate many thousands of new centres of contagion among the community? That is the question which you are asked by the vote to-night to determine."

The result of this speech on the House of Commons has often been quoted as a proof how much effect may be produced on the votes upon a question in which political differences are not involved. The Government,

which expected the anti-vaccinators to be victorious, were surprised at the success of the amendment. It was as follows:—"That in the opinion of this House the practice of vaccination has greatly lessened the mortality from small-pox, and that laws relating to it, with such modifications as experience may suggest, are necessary for the prevention and mitigation of this fatal and mutilative disease." In fact, nearly the whole House walked into the division lobby with me, for the votes were:—

For Mr Taylor's motion against vaccination . .	16
For Sir Lyon Playfair's amendment	286
Majority	270

Though the victory was crushing, the anti-vaccination societies never accepted their defeat, and tried to make my life miserable by incessant personal attacks. These attacks pleased them, but did not hurt or even annoy me.

At the end of 1882 a resolution had been passed appointing Grand Committees to consider non-contentious Bills. These had been long in contemplation, because the consideration of such Bills by a Committee of the whole House practically resolved itself into a Committee of persons specially interested in the subject-matter of the Bill. This devolution of business was, in Mr Gladstone's opinion, one of the most important measures of procedure which the House could adopt. Two Grand Committees, one on Trade and the other on Law, were appointed in 1883 to examine and report on all Bills referred to them, and a panel of half a dozen of the most experienced members of the House was appointed from which a chairman should be selected to preside over the deliberations of the Grand Committee upon each separate Bill. Over this panel of chairmen I acted as president. The experiment of these Grand Committees was fairly tried in 1883 and 1884, and gave such encouraging results that when Parliament resumes its legislative functions by getting rid of this Irish difficulty, it will doubtless use them more frequently as a means of devolving detailed work upon competent bodies outside the House.

Playfair always regarded it as one of the less fortunate incidents of his life that he had been induced to accept the office of Chairman of Committees at a time when the duties of that post were of peculiar difficulty. To some, indeed, it is a surprise that he should have refused the post of chief Whip, which was offered to him by Mr Gladstone in the Ministry of 1880. It is true that from the official point of view, the Patronage Secretary to the Treasury holds a lower position in the Ministerial hierarchy than the Postmaster-General, and Playfair was certainly entitled by his services to a much higher office in the new Government. But there have been many cases in which men have made a heavy sacrifice in nominal position in order that they might take the office which, next to that of the Prime Minister or Leader of the House, is of greatest party importance in the House of Commons. All who knew Playfair must have felt that he was exceptionally well-equipped for the duties of chief Whip. It is hardly an exaggeration to say that from 1850 onwards he had always been discharging a Whip's duties in one position or another. From the time when he was brought in contact with the Prince Consort during the preparations for the Exhibition of 1851 he was always one of those who were employed behind the scenes, and was always engaged in that work of organisation and manipulation which is the chief task laid upon a Parliamentary Whip. His brilliant success in conducting many difficult negotiations to a successful issue justified his friends in believing that in his hands the duties of the chief Whip would be discharged in the most effective manner.

It might indeed be difficult to understand why Playfair should have hesitated to accept a position for which he was so eminently qualified, if it were not for one reason—that is the fact that the chief Whip is essentially a party man. His whole work is devoted

to the advancement of the interests of his own party, and it is for that object that he may be said to live. Playfair, as the reader has seen, abstained as a matter of principle from any keen partisanship whilst he remained member for the University of Edinburgh. This was the reason which led him to turn aside from the proposal, and to accept an office for which, as it turned out, he was not so well equipped as he was for that of chief Whip. The story he has told of his occupancy of the Chair during the stormy Sessions of 1880 and 1881 does bare justice to the work he accomplished and the sacrifices he had to make during his tenure of office. Upon him even more fully than upon the Speaker himself fell the brunt of that terrible battle with Irish obstruction in the course of which Parliamentary procedure nearly suffered shipwreck. It was the most trying crisis in the history of the House of Commons since the days of the Stuarts, and though it cannot be claimed for Playfair that in that stormy epoch he achieved one of the notable triumphs of his life, his friends may justly demand that he should receive credit for the tenacity with which he clung to his post and discharged his duty to the historic assembly whose fortunes were momentarily committed to his keeping, without regard to the sacrifices which his devotion entailed upon himself.

As the suspension of the Irish members in 1882 was an incident of grave importance in the history of the House of Commons, it may be well to supplement Playfair's statement in the foregoing chapter of Autobiography with some of the documents in which the points at issue are stated with greater fulness.

Playfair to Mr Speaker Brand.

68, ONSLOW GARDENS,
July 17th, 1882.

DEAR MR SPEAKER,—I enclose a memorandum on the action taken by me in naming members on July 1st. You do not require to be assured that I carefully followed

precedents upon that occasion, but the memorandum may be useful to Mr Gladstone in considering the course to be pursued in relation to Mr Gorst's notice of a vote of censure on the Chairman. That notice, and the two amendments on it by Mr Dillwyn and Mr Anderson, are founded on the error that the standing order is limited to the suspension of individuals, and does not apply to a combination of members to obstruct. I consider it to be of extreme importance that they should be met by a counter motion that the Chairman acted in accordance with precedent when he applied the standing order to a combination. A vote of the House in this sense will give to that standing order a most important disciplinary force. To the personal censure I attach very little importance, but to Mr Gorst's interpretation of the standing order I see very grave objections. In the view of our future procedure I should be glad if an opportunity were given to discuss it, and meet it by a resolution which would confirm the Speaker's and Chairman's interpretation of the rule.

Yours sincerely,

LYON PLAYFAIR.

MEMORANDUM as to the action of the Chairman in naming Members on Saturday, July 1st, 1882.

To understand the ruling of the Speaker and precedents established for the enlarged action of the rule of 28th February, 1882, Standing Order 173a, it is necessary to refer to last year's proceedings during the protracted sittings.

(1) On the 1st February, 1881, Sir Richard Cross appealed to the Speaker to rule whether, "taking into consideration the speeches of honourable members, and the whole course of debate, that this mode of carrying on the debate is not, in the terms of the rule, persistent and wilful obstruction of the business of the House."

Upon this the Speaker gave a clear ruling, all of which bears on the point, but of which the following extract is sufficient for explanation: "If I found that there was a distinct and clear combination on the part of members of this House wilfully and persistently to obstruct the business of the House by combination, I should consider that this Standing Order should apply."

The Speaker left the chair, and Mr Playfair, as Deputy Speaker, took the chair. Early in the morning of Wednesday, 2nd February,

Sir Stafford Northcote pressed him to apply the rule as interpreted by the Speaker, and Mr Childers promised the support of the Government if the Deputy Speaker would so enforce the rule. The debate went on, the Irish members protesting against such an application of the rule, and some English members desiring that it should be so enforced.

After hearing these observations the Deputy Speaker again read the ruling of Mr Speaker, given before he left the Chair, and then spoke as follows:—"Agreeing with Mr Speaker that what has occurred in the debate would go far to bring some of the members who have taken part in it within the scope of the Standing Order if they individually persisted in obstruction when called upon to desist, *I shall watch with great care that no waste of the time of the House takes place on Motions of Adjournment.*"

The House, which was of course ignorant that the Speaker intended next morning to close the debate, strongly manifested disapproval that I did not at once name the members obstructing, and the Conservatives in a body rose up and left the House with a certain number of Liberal members. A division on the question of adjournment soon followed. As I left the Chair for the retiring room I found Mr Parnell and the leading Home Rulers waiting for me behind the Chair; and they asked me to explain what I meant by the portion of the ruling which I have underlined. I stated that while the rule had hitherto been applied to individual cases of obstruction, it was now extended to combination; and while I would apply the rule to individuals in the old way, I should consider continued dilatory motions for adjournment as a proof of combination, and I would apply it to all members taking part in them. The Home Rulers then made no more such motions, but spoke on the main question till the Speaker resumed the Chair next morning and ended the debate. That they fully understood this interpretation is shown by the fact that they did not then, nor have they ever since, obstructed by *continued dilatory motions.*

(2) Up to this time there had been no precedent for applying the Standing Order to more than one member, a separate vote being taken on each. On the 3rd February the double action of the rule was enforced. Three members (Dillon, Parnell and Finigan) persisted in motions that Mr Gladstone be no further heard, which Mr Speaker ruled were evidence of wilful and persistent obstruction, and they were individually named and suspended. Then twenty-eight members defied the authority of the Chair, although admonished, and the Speaker named the whole twenty-eight members to the House as defying the authority of the Chair. Thereupon Mr Gladstone moved in a single resolution that the twenty-eight members (naming them) be severally suspended.

Note.—This action of Mr Speaker and of Mr Gladstone in naming and moving the suspension of the twenty-eight members *in a single*

resolution was challenged at the time by Mr A. J. Balfour and Mr Gorst, and was over-ruled.

(3) Mr Playfair acted on these precedents with great care. The Committee had lasted for twenty-three days, and the debate on the 17th Clause for nineteen hours, when he acted. On the previous evening, 30th June, an appeal was made to the Chair whether the time had not come to put an end to these proceedings. Mr Playfair then said, "The time has come when I must seriously call the attention of the Committee to the very prolonged mode in which these debates are being carried on, and I trust that the Committee will support me in my efforts to confine the speeches of members directly to the amendment." The Home Secretary (Sir William Harcourt) said: "On a Clause of secondary importance, a Clause which involves no constitutional principle, time has been expended equal to two whole working days of the House of Commons, to the enormous inconvenience of individual members and to the scandal of the country. It has been done deliberately; it has doubtless been done in an adroit manner, but it has been done intentionally and the adroitness has not in the least degree concealed the deliberate intention of blocking and impeding a measure for the prevention of crime in Ireland. This is a course of proceeding which I ask the House and the country to take note of, because in view of the terrible condition of Ireland, the time has come when this House should adopt some method of putting an end to this course of proceeding."

Sir Stafford Northcote then spoke as follows:—"The Home Secretary spoke in the name, not of the Government nor of himself individually, but of the whole House generally. The House is well aware of the real situation, and it is an insult to our common sense to divert us from the real situation by such flimsy pretexts as have been put forward during the time I have been in the House. Do hon. gentlemen suppose that those who have been away for some hours are not perfectly aware of the tactics intended to be pursued?"

Mr Playfair had left the Chair at 1 a.m., but he never left the House. He was up from his sofa at 6 a.m. trying to gather all the information of the proceedings during his few hours' absence, and he had a careful *précis* of the above speeches made for him by Mr Shaw Lefevre, who was in the Chair. At 9 a.m. Mr Playfair resumed the Chair, and found the Committee fully engaged in discussing obstruction and not the clause. Unwilling still to act, he brought the Committee back to the clause, but the House was in no humour to continue. Repeated appeals were made to him to exercise the authority of the Chair. Mr Biddulph rose and asked whether the time had not come to bring this farce to an end. Thereupon Mr Playfair spoke as follows[1]:—

* * * * *

[1] Playfair's reply has already been given in his Autobiography on p. 294. —EDITOR.

The warning of the preceding night and this express warning were followed by no results. Mr Redmond continued the debate with the same irrelevance, and had to be repeatedly called to order for irrelevant talk. Finding the warning of the Chair treated with contempt, and the sense of the House strongly expressed, the Chairman named to the Committee sixteen members. To meet combined obstruction the rule had to be applied with sufficient force, and these names were selected after careful consideration of the number of times they had spoken and voted in dilatory amendments. That some members were absent at the time in relays, did not exclude them from a rule applying to combination. I conclude by stating that I acted strictly according to precedent and to the sense of the Committee. When, a few hours later, more members were suspended, I followed the same precedents, and did not act till after due warning, and till I had ascertained the general sense of the House, as explained by the leaders on both sides, and by unmistakable evidence from the body of the House. If the Speaker's view and my own of the extent of the rule be right, there certainly was no impatience shown in acting upon the sense of the Committee, and every part of the precedent was followed to the minutest detail.

LYON PLAYFAIR.

I have quoted this memorandum at full length because Playfair is entitled to have his defence of an act which was severely criticised at the time placed before the world. No one now will question the extreme difficulty of the position in which he was placed, nor will anyone deny that he did not merit the harsh judgments which it pleased certain politicians of both parties to pass upon him. He was in the unfortunate position of having to wield great and exceptional powers, whilst holding an office to which the House of Commons did not attach great or exceptional authority. The House had bowed to the ruling of the Speaker in the previous year, when he had executed a *coup d'état* in the interests of freedom of debate. The majority of its members were desirous that a similar stroke should be dealt at obstruction in 1882 by the Chairman of Committees; and Playfair, seeing clearly that the vital interests of Parliamentary debate and his own duty as Chairman demanded this action, was courageous enough to take it.

He acted, as his memorandum shows, with the strictest regard to precedent. He certainly did not act hurriedly or under the influence of any mental excitement. He bore with provocations which the leaders of both parties had declared to be insufferable, and he turned a deaf ear to the taunts and gibes of those who, forgetting the difficulties of his position, believed that he was neglecting his obvious duty as Chairman by not putting a speedier end to the obstruction practised by the Irish members. When at last he acted he did so with thoroughness and efficiency. The barrier of obstruction which had been reared was swept away, and the Bill was enabled to proceed through Committee. But no sooner had this step been taken than he became the subject of the severe criticisms of which he has spoken in his chapter of Autobiography. Many of the men who had been loudest in denouncing obstruction now turned round, after the easy fashion of Parliamentary politicians, and denounced the agent by whom the obstruction had been overcome. Playfair, who had been blamed in the first instance for his imagined weakness, was blamed now on the ground that he had overstrained his authority. It is a story with which most men who have been mixed up with public affairs are only too painfully familiar. I do not say that Playfair was to any unusual degree a victim of the tendency of Parliamentary parties to oscillate between one extreme and another. All that I claim for him is that his plain exposition of his own action should have due weight given to it, and that the censures to which he was exposed at the time by those who proclaimed that his Chairmanship of Committees was a failure should be treated as being worth just what they were.

Nevertheless, it is idle to conceal the fact that Playfair's chairmanship was wrecked upon that rock of the Irish question which has proved fatal to so many Parliamentary

reputations. He had to stand in the breach, as I have already said, at a most critical moment in the history of the House of Commons. He did his duty manfully, and the world knows now that to him and to Mr Brand the House of Commons is indebted for the fact that its freedom of action and debate was not submerged under the flood of revolutionary obstruction. It was the authority which these two men exercised, the one as Speaker and the other as Chairman of Committees, that brought the whole question of obstruction to a head, and compelled the unwilling Government—or one ought rather to say, the unwilling leaders of both political parties—to recognise the fact that circumstances imperatively demanded some alteration in the old rules of the House of Commons. Whatever else may be denied to Playfair in connection with his Chairmanship of Committees, it is hardly possible to deny to him the credit of having had a substantial share in that amendment of the rules of Parliament which has once more made debate possible despite the tactics of deliberate and intentional obstruction.

The letter marked "Private and confidential," to which Playfair alludes in his Autobiography as having been received by him from Mr Gladstone after his announcement of his intended retirement from the Chairmanship, is as follows :—

Mr Gladstone to Playfair.

10, DOWNING STREET, WHITEHALL,
August 4th, 1882.

MY DEAR MR PLAYFAIR,—I receive your letter with much regret. When you come to act upon the intention you describe as formed, it will not be an easy matter to fill your place. There is certainly a point at which domestic calls must begin to assert themselves against Parliamentary engagements. I am very glad, however, that you do not contemplate any early step, and that you propose to keep your determination secret until the time

for acting upon it shall come near. It would be disastrous were either the act or the promulgation to be so timed as to stand in any apparent connection with the late struggle to maintain the authority of the Chair. Unquestionably the burdens of your office have been beyond all common measure; but it is (as they say) upon the cards that they may be prospectively lightened by an effective measure of devolution, if the House can muster sufficient courage to adopt one. Should such a thing happen, there will be nothing so far as I am concerned to hinder your reconsideration of the subject of your letter.

Believe me,

Most faithfully yours,

W. E. GLADSTONE.

Same to the same. HAWARDEN CASTLE, *January 3rd*, 1883.

MY DEAR MR PLAYFAIR,—I lose no time in informing you that we have decided on proposing Sir Arthur Otway as your successor in those offices of Chairman of Committees and Deputy Speaker which you have discharged with so much ability in such difficult times. It is almost superfluous for me to bespeak your interest on behalf of Sir Arthur Otway, who will, I have no doubt, at once apply his very considerable Parliamentary abilities to the work of acquiring the special knowledge necessary for the office for which he will be, I hope, a successful candidate.

Believe me,

Most faithfully yours,

W. E. GLADSTONE.

Sir Arthur Otway to Playfair. 26, LOWER BELGRAVE STREET, *February 17th*, 1883.

MY DEAR MR PLAYFAIR,—I thank you for affording me a perusal of your able memorandum relative to the suspension of the Irish members in July last.

I have no doubt that the effects of your action will be beneficial should unhappily a similar state of things arise.

I must offer you a word of congratulation on the "evident sense of the House" on your taking the Chair last night. It would have pleased you to know the observations which reached my ears, sitting at the end of the Opposition benches near the Chair.

I am,

Very truly yours,

ARTHUR OTWAY.

Before I leave this question of the suspension of the Irish members, and the consequent amendment of the forms of the House with a view to the prevention of organised obstruction, I may quote the following correspondence which passed between Playfair and Mr Chaplin as a consequence of a speech in which the latter had cast some doubt upon the principles on which the former had acted.

Playfair to the Right Hon. Henry Chaplin.

November 14th, 1882.

DEAR MR CHAPLIN,—I observe in reading your speech that you asked me the specific question as to whether I accepted the interpretation of the Speaker that "the general sense of the House" meant the sense of the House at large. Had I been in my place during your speech, I would gladly have answered your question. Before doing so, let me remind you of a precedent which I tried to establish on the 1st of July last. The suspensory rule was then to be applied to combined obstruction. That rule leaves the initiative to the Chairman. But no Chairman could act under such circumstances without believing that he did so in accordance with the general sense of the House. The Chair during the night had repeated appeals from individual members to put an end to the obstruction. My own view of the position had been expressed on the preceding day by an emphatic warning. It was not, however, until the Home Secretary made a solemn protest against obstruction, and till Sir Stafford Northcote stated

that this protest expressed the opinion, not only of the Opposition but of the House at large, that I considered the time had come to apply the rule in the large sense laid down by the Speaker in the previous year. Upon this belief I acted in taking the initiative to suspend the first list of members. Later in the day obstruction again appeared, and individual members once more appealed to the Chair to apply the suspensory rule. I replied that my own opinion as to the existence of obstruction was decided; but before taking the initiative I waited to see whether the general desire of the House was with me. When Sir Richard Cross, then in charge of the Opposition Front Bench, and Mr Gladstone, in charge of the Government Front Bench, both expressed their view that obstruction prevailed, I felt that I had gathered the general sense of the House, and that I was justified in taking the initiative. Having thus tried to establish a precedent that the suspensory rule as applied to combined obstruction should only be exercised as an expression of the House at large, you can have no doubt as to my full accordance with the interpretation which the Speaker has given of a rule which expressly enjoins that the Chair shall only take the initiative when it has ascertained the general sense of the House.

The Right Hon. Henry Chaplin to Playfair.

STAFFORD HOUSE, *November 15th*, 1882.

DEAR MR PLAYFAIR,—I have to thank you for your letter which I have received to-night, and for your very courteous reply to my inquiry. I raised the question in the House of Commons regarding your opinion, in common with many of my friends, upon the interpretation to be placed upon the first resolution, as of the first importance; and it is gratifying to find from your letter that our anticipations and hopes are equally fulfilled. I do not know how far I may be justified in making it known, or whether you would wish it to be public, but under any circumstances I should be glad, with your permission, to make it known among the members of the party who have looked

with so much aversion upon the first resolution in its present form.

Believe me,

Yours very truly,

HENRY CHAPLIN.

The battle between the authorities of the House and the forces of obstruction has been dwelt upon already in this chapter at sufficient length. That Playfair had to take an important part in that struggle I have endeavoured to show, nor can he be denied the credit which I have claimed for him of a not inconsiderable share in the ultimate triumph of Parliamentary procedure over Parliamentary lawlessness. There was, however, another side to Playfair's life as Chairman of Committees upon which he has touched but lightly in his Reminiscences. The outside world has but a limited conception of the labours which fall to the lot of its public servants. Above all, it has little knowledge of the strain which is thrown upon members of a Government during their term of office. "Flesh and blood cannot stand more than five years of official life at a stretch," are the words said to have been uttered by a distinguished Minister of the Crown. The burden laid upon flesh and blood in all the offices of the State is undoubtedly a heavy one, and Playfair had to bear his full share of that burden during his Chairmanship of Committees. Some idea of its weight will be gathered from the subjoined extracts from letters to his wife, who had preceded him on their annual visit to America, at this period of his career. These letters deal only with the proceedings of a few days, and yet they furnish the reader with a startling glimpse of what passes behind the scenes at times when the outer world sees only the public aspect of the questions at issue. It was the cruel pressure of this burden far more than the difficulty of deciding upon the nicest questions of Parliamentary

procedure at a moment's notice, that led Playfair to retire from his post of Chairman of Committees. Whilst he held that post all his other occupations were of necessity brought to a standstill. Even with all his immense power of work, he could not combine with his official duties his usual course of study and labour. As for his domestic peace, and the possibility of enjoying the repose and happiness of his own home, it was, for the time being, absolutely destroyed. These were the urgent reasons which led him to retire from his office after the Session of 1882 had come to an end; and that they were substantial reasons the letters I subjoin will conclusively prove.

Playfair to his Wife. *August 18th*, 1880.

The Session shows no sign of drawing to a close. Last night we passed only 14 votes out of 68, and we had calculated on passing 42, so the prospect is bad enough. I fear that we shall sit till the first fortnight of September. I am right glad that you are out of it, and will get some summer. The very first day I am at liberty will see me on board, though I fear the voyage will be uncomfortable with Equinoctial gales. The poor *Baltic* was run down yesterday in the Mersey, and has to go into dock, so there is one ship less for the traffic. To-night I dine with Lord Granville, so there will be a little break in the monotony of work.

Auntie says, "Fly to good E—— as quickly as possible." No need to counsel me to do this, as it is the only pleasant waking dream I have amid the chatter of the obstructionists.

Same to the same. *August 19th*, 1880.

I am so kept up to the collar just now that I positively have not a moment to write. I was home at 4 a.m. to-day, and now at 12 am just going into the Chair, with five minutes to eat something. But I do not like to let you be without a line. I am wonderfully well, though

how I shall stand Saturday and the great Irish attack on Monday and Tuesday, when we are threatened with forty-eight hours' consecutive sitting, remains to be seen.

Hartington spoke yesterday of the 4th for prorogation, but I think that too sanguine. In that case I could sail on the 2nd.

Same to the same. *Saturday, August 21st, 1880.*

Still no surety of the end of the Session, but I have faint hopes that I *may* get away on the 2nd, if the House adjourn that week. Everything will depend on the Irish row on Monday and Tuesday. They still threaten a forty-eight hours' sitting; I have stipulated in that case for a chairman to take my place for six hours on the second day. I am quite up to twenty-four hours on a stretch. If this breaks down with a single day of twenty-four hours we may finish by the 4th. I am now going upstairs to pack up for Brighton. I thought of Tunbridge, but I wish some sea air and some cheerfulness to prepare me for Monday. "Order, Order," "The ayes have it," "Strangers must withdraw," become very monotonous duties of a Chairman, and require some alleviation.

Same to the same. BRIGHTON, *Sunday, August 22nd, 1880.*

To-morrow is to be the great trial of physical strength between the Irish and ourselves, so I may have no time to write for two or three days. Their tactics are to prevent Irish Estimates being passed, and to keep me in the Chair as long as physical endurance permits. Of course some amateur chairmen must be provided to help me. So I have come here to lay in a stock of health and sleep, and the weather is glorious, and the result much better than at Henley. I have been sunning myself all day. I sat down on the pier beside a queer-looking man, who, when he stood up, was nearly eight feet high, and then I recognised him as the Norwegian giant, who has been exhibiting at the Aquarium in London for 1/-. As my stature did not contrast favourably with his I quickly got out of proximity

to him. I had hoped your telegram would have reached in time yesterday, but when I left at two it had not arrived, nor could it before post-time, 5.30, as I told them to send it on. You must therefore have had rather a slow passage. But I think with so much pleasure that you are now, at least, with your father, and you may even be in the act of taking the 11 o'clock train on Sunday for Nahant—for though it is three here, it is earlier with you.

I hope that my eyes will be cheered with the news of the arrival of the ship in the 'Times' to-morrow. "Eyes" remind me that I should not be writing even to you to-day, as they require all the nursing I can give them for the long sitting in prospect.

Same to the same. *Tuesday, August 24th, 1880.*

I am so pleased to think that as I am writing (12.30) you are probably in the act of going down to your first breakfast in the dear home. I am so rejoiced that you went, and that you will have some summer weather at Nahant. Last night was to be the first of our forty-eight hours' fight with the Irish. They were very excitable, and determined that we should not get a single vote in supply. About 11.30 I found that the Government had failed to get any reason out of them, so I asked Lord Hartington to let me try my powers of conciliation. Accordingly, as the Speaker was in the Chair and likely to be kept all night—for their tactics were to prevent me getting into it—I laid myself in the way of the more moderate and influential men, and pointed out how much their motives would be misconstrued by the country. I then suggested that they might take the non-contentious votes in supply that night, and take the constabulary vote to-day. Most of the Irish laughed at me, and told me I should not succeed, as they had held a meeting and determined on obstruction. However, after a little I talked them over, and at one got into the Chair and passed twelve votes, greatly to their own surprise and that of the Government, who have asked me to take the management of affairs to-day also. So instead of sitting up forty-eight hours I got to bed at three. To-day

the job is more difficult, but the Irish like me, and will do a good deal to please me.

I have some hopes that I may sail in the *Adriatic* on the 7th. This is by no means sure, and will depend much upon our progress to-day.

Same to the same. *August 26th*, 1880.

Still uncertain news as to my chance of leaving. It all depends on to-night's battle. Hitherto we have shirked fighting the Irish, but we have determined to sit up to-night. So I have brought razor and toothbrush! My purpose is to sit up all through the night till 6 a.m., and then ask relief till 12. I shall get five hours' sleep, a wash, and some breakfast—of course not going home but sleeping in the House, so that if the amateur Chairman cannot keep order I may be called in. If we break the neck of this senseless obstruction in one night's sitting, I may be able to get away in the *Adriatic* on the 7th, presuming that I can get a passage in her.

Same to the same. *August 30th*, 1880.

I have had a very heavy week of it. I give you a diary.

Thursday—Chair 5 p.m., continued in it to 6.20 a.m. Friday, then slept one and a half hours; rested on couch three-quarters of an hour, dressed, breakfasted, and consulted Speaker again.

10 a.m. in Chair, continued till 1. Went home, had four hours' sleep, returned to House and took Chair 9 p.m. till 3.20 a.m. Saturday morning. Went home, got five hours' sleep, and took Chair—(Saturday).

12 a.m., and continued with ten minutes' intermission for lunch at 3 till 11.30 p.m. I got hold of two ham sandwiches during a division, and munched them secretly in the Chair about 10.

On Sunday I had my revenge, and did not rise till 12. I went out in the afternoon to the Grant Duffs', who had the Osborne Morgans with them. They wished me

to stay for the night, but I longed for my own bed and no need for rising early. I am as fresh as a lark still, but the poor Speaker looks jaded and worn. I fancy it must be worse sitting up doing nothing than being actively engaged. At 9.30 on Friday morning, when I was shaved, dressed, and breakfasted, I found the Speaker sitting in a very dusty Court dress, unshaven and battered, in his armchair. He was asleep, but uncomfortably so. He told me he had passed most of the night in Mrs Brand's gallery, pitying me being badgered by the Irish obstructives, while I enjoyed the fun. The House has certainly been much pleased at my endurance, for they always cheer me loudly as I leave the Chair. I have taken my passage in the *Adriatic* for the 7th—or rather have written for one—so I shall soon join my lassie and her and my dear ones over the water.

Playfair returned from America at the close of 1880 completely restored to his usual state of vigorous health.

Same to the same. *December 15th*, 1881.

Count Bismarck and I left [Walmer Castle] at 11 to-day and returned home. Yesterday we had two Engineer officers from Dover who joined our party, but they were strangers to Lord and Lady Granville, and were shy, so they did not add to our entertainment.

I enjoyed my visit much, and got to like the children, especially the heir, Lord Leveson. He is nine, but singularly intelligent, and we had nice walks together. He told his mamma that he had never seen such a man, for stories ran out of my brain as fast as he asked for a new one! And he asked me to write a book for children!

I went up to the school-room, which no visitor had ever done, and told the girls about the habits of animals, and I think was popular with all the young ones.

When I came to the hotel I found your two dear letters. I am so glad that you got on so comfortably, and that you enjoy yourselves.

From the correspondence which Playfair maintained with the family of his wife, I make the following extracts :—

Playfair to S. H. Russell, Esq. *February 22nd, 1879.*

Our politics just now are very uninteresting; both Lords and Commons feel that the Parliament is old and nearly moribund, and there is little interest felt in our discussions, either inside or outside the House. The Zulu war is a sad affair, but inevitable. Our colonies in South Africa have no natural boundaries, and it is cheaper to conquer border savage tribes than to make regular boundaries to keep them out. This is really the secret of Russia's great extensions and of England's annexations. I see in the future that England must fight every few years till she gets to the great Lake regions of Victoria Nyanza; and it is possible that we may meet Egypt stretching out her arms into the same region. Ultimately we may have to swallow Egypt also, and the English future will be to civilise Africa when perhaps we have lost our hold on India. Of course I shan't live to see all this accomplished, but I daresay Edith will. The Anglo-Saxon has certainly a future greater than the Latin race, and will some day be dominant in three out of four quarters of the globe.

Same to the same. LONDON, *April 6th*, 1879.

MY DEAR RUSSELL,—I have not written to you for a long time, but by the time my business letters are ended I get such a dislike to writing more that I easily reconcile to my conscience to postpone private correspondence. . . . The Government are having a bad time of it with their little wars—Afghan, Zululand, and Burmah in prospect. And yet the Chancellor of the Exchequer does not add one penny to the taxes. He takes the easy way of saying, "If we have a surplus in the three following years we can pay our debts out of that." So his Budget will be popular, for people do not like to pay increased taxation, and postponing one's creditors is an easy, if not honest, policy.

Playfair to Miss Alice Russell.

WINDSOR HOTEL, NEW YORK,
November 8th, 1879.

I fancy that I must be a simpleton in my looks, for twice have I been beset by "confidence" men since I started. Once was in the cars, where a Western, in a huge, broad-brimmed hat, tried to get me to take some shares in a gold mine; and to-day an innocent youth spent five cents to get into an omnibus to find out whether I was the Rev. Mr Dodds of San Francisco. The same innocent, with a much sharper-looking companion, dogged me down Broadway and the Fifth Avenue, and tried to entice me into conversation. A policeman appeared, and I suggested that it would be interesting to me to find out whether there was any law in New York to protect strangers from impertinent intrusion; and they vanished like greased lightning.

Playfair to S. H. Russell, Esq. *January 15th*, 1881.

Politically we are in a sad state. We see no end to the obstruction of the Irish members. They have already had nine days' talk on the Queen's Speech, and all next week we expect a flow of Irish garrulity before the measures of coercion are even introduced. 'Punch's' cartoon this week well illustrates the situation. Gladstone as Don Quixote on a charger is charging through a fog with huge rocks of obstruction in the foreground. Yet what can we do? If we introduce new rules on debate they must be passed, and it would probably take ten days, sitting night and day, to put them through the House. Nothing will do but *clôture*, that is, the House having power to stop debate when it has exceeded fair proportions. But neither side of the House likes the idea. It is foolish not to pass it, for a majority responsible to the public will never so abuse rules as an irresponsible minority do against a majority. In France Guizot says that since an experience of *clôture* began in 1814, there has never been an instance when free and ample discussion has been prevented by it. The state of Ireland is indeed desperate. The Queen's Courts are powerless to administer justice, for no witnesses can be got

to testify to crime, and no juries can be got to convict. But the Land League Courts flourish when the Queen's Courts are in contempt, and these self-constituted courts are merciless. Take an instance: A priest spoke against the prevailing lawlessness. An edict went out from the Land League Court that no dues were to be paid him at Christmas beyond one shilling. A well-to-do farmer sent him as usual 20/-. That same night all the farmer's ricks were burned to the ground. Within the last few weeks the outrages have diminished, but that is because the system of terrorism is so complete. For the decrees of these self-constituted courts are no longer disobeyed.

Already Fenian movements are springing up in England. Yesterday an attempt was made to blow up barracks at Salford, though luckily only two people perished. The anger of the English and Scotch is rising so much that I fear the Government may be forced into imprudent action. I have difficulty in explaining to others the American action. Most of the funds for this agitation come from the United States: when, coupled with this, an insolent and defiant motion is made in Congress with a prospect of being carried, it is not surprising that the English do not know how to separate the Americans from the Irish and the Democratic Congress. Our statesmen, like Gladstone, Granville and Forster, know that there is no real American sympathy with the Irish agitators. But the general public see in the Davitts, Devoys and others sent over by 'The Irish World' newspaper from New York, agents of American agitation. If we get the Habeas Corpus Act suspended, short work will be made of them, but this may produce complications with your Government until your new Republican Congress comes into operation. As yet I have not had much to do, but I should not be surprised if after next week we may sit night and day, in which case the Speaker and Deputy-Speaker will have to sit alternately. Luckily my Private Bill legislation will not occupy me much till the middle of February, so I hope to get through work without too great a strain upon me. We all look with so much interest to letters from Boston, as they keep us well up with our dear American home.

Same to the same. *February 28th*, 1882.

Sometimes I feel inclined to rebel at my ungrateful work, and feel disposed to throw it up, and wait for something more congenial to my taste and head. For my work is really no better than that of a master in a badly-behaved school. Our political condition is not encouraging. Troubles in Colonies, troubles in Ireland, and general dissatisfaction with our Parliamentary paralysis, have given the Government a bad time, and have not increased its support in the country. Your "Skirmishing Fund" in America keeps us in constant watchfulness. One day Windsor Castle is threatened; another day the Docks; a third day Westminster Abbey is supposed to be the subject of dynamite and petroleum. We outsiders laugh, but the Government do not, and constantly surround the places threatened with detectives and police. Even the Volunteers cannot have the use of their arms lest they should be seized by the Fenians. Yet the "Skirmishing Fund" collected in America does not appear to be more than $100,000. Certainly it seems to be enough to send over lots of very suspicious passengers by the steamers. Last week double the number of suspicious characters arrived in London that have come in any week since our troubles began. Sir Edward Thornton is well-informed, and keeps the Foreign Office fully advised, and singular precautions appear to be taken at the houses of our public men. Notwithstanding my unpleasant fights with Irish members, I have not even had a threatening letter, and feel in perfect security, whatever others may do. I was once threatened on leaving the House by a huge, half-drunken fellow, who wished to punch my head in the snow; but he thought that I was an Irish obstructive, and wished to teach me what Englishmen thought of obstruction. Our suspension of the Habeas Corpus Act is now nearly passed, and the steamers *to* America are being filled with ruffians, so we may soon hope to escape these periodical scares.

Playfair to Mrs Russell. BATH, *December 11th*, 1882.

This will probably reach you at Christmas time, and I wish you all happy returns of the season. We are likely to spend it in a more lonely though not less happy way than you, for Edith and I are perfectly alone together, not knowing one human being in this town. But we are quite happy and contented. Edith has been a capital nurse during my illness. The coming year will, I hope, restore more of family life to me. I have no intention of being so much of a Parliamentary man next Session, whatever happens. I may, or what is more probable, may not have other official work to do; but in any case I do not intend to spend fourteen or fifteen hours daily away from home, as formerly.

The history of the House of Commons between 1883, when Playfair quitted office, and 1885, when the dissolution took place, was a troubled one. Cross currents—to use a phrase which has since attained notoriety—were the order of the day. The Liberal party was struggling with two great questions—those of Ireland and of Egypt—and was witnessing the gradual spread of those rifts within its own borders which by-and-by were to reduce it to something like impotence. No one in those years clearly foresaw the future; few dreamed of the course which the Home Rule question was about to take. Fewer still realised the fact that this Parliament of 1880, which had been elected on the crest of a great wave of enthusiasm, was to be the last Parliament in which the historic Liberal party would act unitedly and serve under a common leader. Playfair, by his retirement from the post of Chairman of Committees, had secured a position of personal independence in the House. He found himself one of a small company of distinguished men who, like himself, had been relieved through their own action from the fetters of office. Mr Bright, Mr Forster, and Mr Goschen were of their number. It was natural that when men of so much weight in Parlia-

ment, belonging to the party then in office, had taken up an independent position, the spirit of criticism should be rife in the House. Probably the acts of no Ministry were ever more severely criticised from its own side of the House than were those of the Ministry of 1880 during the last two years of its existence. It was known that even in the Cabinet divisions existed. It was believed that there was a party in the Government, strong in its influence if not in its numbers, which wished to come to terms with Mr Parnell and the Home Rulers of Ireland. Events in Egypt had done much to discredit Ministers in the eyes ot their fellow-countrymen; and there was no question upon which they were more unpopular than upon those associated with the names of Khartoum and General Gordon. If Playfair had been a man in whose soul any rancour was harboured, if he had been one to whom personal advancement was everything, it can hardly be doubted that he would have found, during 1883 and the two following years, an ample opportunity of distinguishing himself in the House by his hostile criticisms of the proceedings of the Ministry. But he was the last man in the world to seek shelter in any Cave of Adullam. That sweetness of temper which characterised him in private life was not less conspicuous in his public career. The political principles he professed were dear to him as sacred things. He had left office; he was independent; he saw Ministers floundering deeper and deeper in the quagmire in which they had become involved; he knew that he could secure the enthusiastic support of the majority of his own constituents if he turned upon the falling Government and enrolled himself among the band of relentless critics who hung upon its flank. But he absolutely refused to take this course, and when the great moment came for arriving at a decision upon the gravest political question that had been submitted to Parliament and to the country during

his lifetime, he unhesitatingly took the unpopular side upon the question of Home Rule, and by doing so cut himself adrift from the majority of his old personal friends and political associates.

These facts must be borne in mind by those who wish to estimate Playfair's character aright. It would have been so easy and, in a certain measure, so natural for him to have joined the band of malcontents after his retirement from office, that only an unflinching loyalty to principle, and to what he regarded as the truth, allied with a temper of more than common equanimity, could have enabled him to resist the temptation. During these years of the 1880 Parliament, he worked with as much industry and enthusiasm in the House as though he were still in office. He maintained his independence as he had done throughout his Parliamentary career, but it was an independence which displayed itself in his devotion to causes which, though important in themselves, could not command the support of recognised political parties. He stood during these years, as he had stood so long, as the spokesman and representative of interests great in themselves but devoid of that Parliamentary influence which goes for so much in the eyes of politicians. He never stopped to weigh the popularity or unpopularity of the cause he espoused, but flung himself fearlessly into the breach when battle had to be waged on behalf of scientific truth or the moral and material welfare of the people. He has told us something of what he did on the subject of vaccination. More than any other man in Parliament he was responsible for the defeat of the movement against the Vaccination Laws, and to the end of his days he was justly proud of that achievement.

Another cause in which he had to face a still stronger current of unpopularity was that in which is involved the right of men to perform experiments upon living

animals in the interests of scientific truth. Playfair, as all who were acquainted with him knew, had a heart that was always open to the appeal of suffering, and a mind that was singularly sensitive upon questions of moral responsibility. But his humanitarianism led him to believe that, after all, the greatest good of the greatest number was the object to be pursued in public life, and he did not hesitate to stand forth boldly in defence of those who claimed the right to further the interests of humanity, and to widen the bounds of medical knowledge by means of experiments on living animals. He became, as was but natural, an object of intense dislike to the opponents of vivisection. There is no need to argue the question of vivisection in these pages—it is not even necessary to touch upon the notorious exaggerations which are used for the purpose of prejudicing an ignorant public against those who dare to run counter to the views of the Anti-Vivisection Society. Playfair's opinions on this question must be left where he himself would have had them left—to the judgment of the men who know: his fellow men of science and the medical profession. But his biographer must call attention to the fact that in the House of Commons he was in these years of unfettered independence what he had been during his whole Parliamentary career—a courageous advocate of causes which he believed to be true, and from the defence of which no amount of unpopularity could drive him.

Nor was it only in the advocacy of unpopular causes of supreme interest to the health of the community that Playfair showed his stern loyalty and courage at this period of his career. He was just as little afraid to espouse the cause of an unpopular man as that of an unpopular truth. He himself has noted the fact that at the very time when he was compelled by his official position to wage war against the Irish members, he enjoyed amongst these gentlemen a

remarkable degree of personal popularity. Whilst they did everything in their power to obstruct him and embarrass him in his Chairmanship, they took all possible means of showing that personally they regarded him with sympathy rather than with antipathy, and he himself, far from being soured by his conflicts with the Irish party in the House of Commons, was large enough and magnanimous enough to regard their action from a purely impersonal point of view. It was in 1885 that he took a step which, whilst it caused some surprise to his ordinary political associates, endeared him to the great body of the Irish members. During one of his visits to the United States he had met Mr John Boyle O'Reilly at Boston. Mr Boyle O'Reilly was an Irish rebel who had once served in the English army. He was proscribed by the British Government, and forbidden leave to return to his native country. Playfair met him in mixed company in Boston, and found him to be a man of culture, refinement, wide knowledge and gentle disposition. Whatever might be his position in Irish politics, Playfair came to the conclusion that he was an honest and honourable man; and when, in the heat of the struggle over the Irish question, his name was mentioned in debate in the House of Commons, Playfair at once rose, and facing a hostile audience of Englishmen and Scotchmen, bore his testimony to Mr O'Reilly's character, and urged that the Government should withdraw its refusal to allow him to return to his native country. It was a characteristic act, the courage and magnanimity of which can only be fully recognised by those who remember the height which national passions and animosities attained in that bitter period of political warfare in the United Kingdom.

Mr Boyle O'Reilly to Playfair. BOSTON, *February 18th*, 1885.

DEAR MR PLAYFAIR,—Allow me, though still under ban, to send you my most sincere thanks for your kindly

interest in my request to your Government to be allowed to visit Canada and Great Britain. The Home Secretary, as you probably are aware, has refused the request. Mr Bagenal sent to me your letter (copy) to the Irish Secretary. I shall always remember it with pleasure and gratitude. I had no intention of meddling with politics in any way had I gone to either country, so that your word would have been quite safe on my account. I trust that when you visit America again I may have the great pleasure of thanking you in person.

I am, dear Sir,

Very truly yours,

JOHN BOYLE O'REILLY.

As one of the few men of science in the House of Commons, Playfair found constant opportunities of advancing the interests of science in that assembly. Nor was science in the abstract the only matter for which he cared. He was for years the recognised guardian of the interests of scientific men in their dealings with the Government, which has not even yet fully recognised their claims to public support and approval. It is strange to think that in the year 1883 there should have been any hesitation on the part of a Prime Minister, and especially of one so enlightened as Mr Gladstone, as to the desirableness of conferring a mark of honour upon so eminent a man of science as Professor Richard Owen. Yet the following correspondence appears to establish this fact :—

Professor Owen to Playfair.

BRITISH MUSEUM, CROMWELL ROAD,
SOUTH KENSINGTON,
June 28th, 1883.

DEAR LYON PLAYFAIR,—I have received a private letter from an official friend, informing me that "the K.C.B., vacant by the demise of Sir Edward Sabine, which was given for scientific services, ought to fall to your share." It would not have occurred to me, nor was

I aware of the alleged relation. I have never entertained any personal wish on the subject, and on the verge of entering upon my eightieth year, such indifference may be condoned. The chief satisfaction I should feel by such an instance of Her Majesty's gracious recognition would be in regard to the relation of my own to that of other countries in the estimate which has been allotted to me. This consideration has led to the enclosed memorandum, which it might be proper to submit to the Prime Minister, and there is no friend to whom I could have confided it for that purpose except one with whom of old I had the pleasure to be associated in the application of science to the public good.

Believe me, dear Playfair,

Most truly yours,

RICHARD OWEN.

The memorandum which accompanied the above letter, and which Playfair lost no time in placing in the hands of Mr Gladstone, is a document of so remarkable a character that it may well find a place in these pages. For the fact that men of science no longer have to suffer the neglect which was so long their lot at the hands of those with whom rests the recommendation of suitable recipients of the Royal favour, the country is indebted more largely to Lyon Playfair than to any other man.

MEMORANDUM.

At the period when Sir Edward Sabine was elected correspondent of the *Académie des Sciences*, Paris, I was chosen one of the eight foreign members of the Institute (on the death of Robert Brown, justly esteemed the greatest botanist after Linnæus).

About the same period, the King of Prussia decreed that a certain very limited number of the Cross of the Order for Merit should be conferred on discoverers in science, and confided this application of the Order to Humboldt. I was early honoured by being selected for its reception.

Of every Academy of Science of Europe and America I have been elected member.

These may be the best testimonies to a status in science of a contemporary and countryman that a Minister may deem worthy of

consideration; but a large proportion of my working time has been devoted to improved and extended applications of national institutions for scientific progress. The Hunterian Museum of Physiology, purchased by Government in 1789, remained until 1830 uncatalogued —*i.e.* devoid of any adequate manuscript or printed description of its contents and aims. In 1826 I was chosen by the Council of the Royal College of Surgeons, to whom in 1800 the Hunterian Museum had been confided, to assist in the formation of the catalogues which Hunter's executor, Sir Everard Horne, had promised to prepare, but did not. My first catalogue in quarto appeared in 1830, and was followed by successive volumes, which in 1855 supplied the long-felt need.

In 1856 I was honoured with my present appointment in the British Museum. The state in which I found the collections of natural history led to the Report ordered by the House of Commons to be printed in 1859. The main requisites therein defined have been attained for the benefit of both the scientific and general public in the British Museum of Natural History, Cromwell Road.

These public duties have precluded my acceptance of any remunerative scientific office elsewhere, such as the Secretaryship of the Royal Society, etc. I have not, however, deemed it proper to refuse such services as might be required by Government in relation to commissions or inquiries needing scientific knowledge. The Commission on the health of towns was followed by that on the health of the Metropolis, which led to a third on Smithfield Market and the meat supply of London. The only name which would be found on these three Commissions is that of the present writer,

RICHARD OWEN.

No one will question either the sufficiency of the claims set forth by Professor Owen or the modesty of the statement in which they are named.

Mr Gladstone to Playfair.

10, DOWNING STREET, WHITEHALL,
June 29th, 1883.

DEAR MR PLAYFAIR,—Though I cannot make a promise about Professor Owen, I will consider your suggestion very carefully, and it will give me much pleasure if I find I can comply.

Most faithfully yours,

W. E. GLADSTONE.

Playfair's application to Mr Gladstone was not unsuccessful, and Owen received the Knight Commandership of the Bath which he so richly merited in January, 1884.

CHAPTER XII.

VICE-PRESIDENT OF THE COUNCIL.

Playfair's Ties with America—Why he never became a Cabinet Minister—His Acceptance of Home Rule—Appointed Honorary Secretary of the Commission for the 1851 Exhibition—His Views on the Functions of a Minister for Scotland—Decides to retire from the Representation of Edinburgh University—His Candidature for South Leeds—The Constituency described—His Brilliant Victory—His Connection with the "Hawarden Kite"—Appointed Vice-President of the Council. AUTOBIOGRAPHY: Celebration of the Tercentenary of Edinburgh University: With the British Association at Montreal and at Aberdeen: At Glamis Castle again: Reform of the Medical Profession: Re-election for South Leeds.

THE chapters of Playfair's Autobiography which follow that which I have last quoted are brief and fragmentary. As I explained in the opening chapter of this work, the Autobiography, which was commenced in 1882 and chiefly written during his visits to America, was never revised, and a great part of it was written somewhat hurriedly, the writer's intention having been to produce something more detailed and satisfactory if time and his strength permitted. This purpose he never accomplished, and we are consequently without that connected story of Playfair's life after 1880 which he gave us prior to that date. This fact is the more to be regretted, because the closing years of his public career form, in many respects, the most interesting and important period of his life. Happily, he has left behind the means of forming a correct judgment upon his character and action during these years. His marriage to Miss Russell had led to what he playfully described as his adoption of a second country. Those annual visits to Boston and Nahant, of which the reader has already learnt something,

were not only a bright feature of Playfair's life as it drew towards a close, but the means of establishing a bond of affection between himself and his wife's family in America, which led to the interchange of a correspondence from which may be gathered those details of his life that are no longer recorded in his Autobiography. His letters to his wife's father, Mr Russell, have a special interest, because of the light that they throw upon a side of Playfair's character that does not appear either in his Autobiography or in his official correspondence. They are full of revelations, slight in themselves, but nevertheless convincing, of the warmth of his affections, the gaiety of his temper, and the sweetness of his disposition. His relations with his wife's family, from the time of his marriage down to the day of his death, were indeed of a peculiarly intimate and affectionate kind. He entered into the life of the household at Nahant with the ardent interest of a boy. He became a real member of the American family into which he had been admitted by marriage, and he was never so happy as when, turning aside from the engrossing cares of public life in London, he sat down to chat on paper with those relatives in the United States to whom the English official world was a closed book. For their sake he explained many things which Englishmen are supposed instinctively to understand. The fashions and customs of our political world; the ceremonial of great functions; the little personal touches which enable one at a distance to understand the character of a public man, were matters upon which he loved to dwell, in order that he might give pleasure to friends to whom he was devoted on the other side of the Atlantic.

I propose to bring together a number of Playfair's letters to the members of the Russell household, not merely because of their intrinsic interest, but because of the light which they throw upon a side of his character that was

hidden from the outer world. For the present, however, I recur to his life during the later years of the 1880 Parliament. It was, as the reader has seen in the last chapter, a very busy life, though the cares of office did not enter into it. Recognising the fact that his tenure of his seat at Edinburgh was coming to an end, Playfair felt free to throw himself more unreservedly than he had hitherto done into the battle of politics. It had been his personal misfortune to become known in the House of Commons as a member for a University. In that capacity he had served his country well in connection with the advancement of science and of education. He had spoken, as upon the questions of vaccination and vivisection, for the cultured classes. He had been one of the most powerful agents in promoting the growth of technical instruction. He had been an arbitrator to whose judgment many grave questions affecting the welfare of the community had been unhesitatingly submitted by successive Governments. But through it all he had been compelled to feel that he was in a certain sense an outsider in the political arena. He had distinguished himself so greatly on the non-contentious side of politics that the statesmen of his own party seemed to have come to the conclusion that he was in no sense a party man. But for this fact it is probable that Playfair would have taken a very different position in the political world from that which he secured—honourable and distinguished as that position was. But the political leaders on both sides seemed to regard him as a man whose enormous power of work, whose learning, and whose intelligence were to be devoted solely to the service of the public in those fields which offer little scope for the gratification of political ambition.

This is not the place in which to enter upon a disquisition as to the comparative value of public work of a non-partisan character, and of that which is done within strict

party limits. Playfair's life is itself a sufficient vindication of the importance and value of the services which can be rendered to the community and to the world by a public man who stands outside the narrow limits of mere partisanship; but it is not to be denied that a man who, conscious of his own ability, seeks to become a distinct power in the Senate, is more likely to attain his object by throwing himself unreservedly into the arms of a party, than by confining himself to that class of work which lies outside the region of party conflicts.

Playfair would unquestionably have received a Cabinet appointment but for the disadvantage under which he laboured as member for a University in which a majority of the voters were Tories. As the Parliament of 1880 drew to a close, he found himself being gradually emancipated from the bonds that had hitherto fettered him; and whilst he continued to take a special interest in those questions of education and of scientific inquiry which had always absorbed so large an amount of his time and thought, he did not neglect those purely political topics which were the subject of party controversies. A great convulsion, which was destined to bring about something like a revolution in the condition of parties in the House of Commons, was approaching, whilst Mr Gladstone's Ministry of 1880 was slowly drawing near to its appointed end. This is not the place in which to tell the history of the Home Rule movement, nor indeed can that history as yet be told to its end. When Mr Gladstone, breaking away from the policy of a lifetime, boldly resolved to attempt to settle the great question of Ireland in the interests of the United Kingdom as a whole, he drew with him on his perilous and difficult path many men of eminence and high principle, though he had to part from some of those who had been his most faithful colleagues and followers in his previous career. Playfair was one of the men who, in that

great crisis, stood by Mr Gladstone. The very fact that he had occupied a position of *quasi*-independence strengthened the importance of his adhesion to the Gladstonian policy at a time when so many of the Liberal leader's devoted personal adherents were falling from him. The letters I shall presently quote will throw some light upon this step on Playfair's part. But all who knew him will need no evidence to convince them that it was a step taken under the pressure of strong conviction, and from the highest of personal motives.

Many public duties occupied Playfair after his resignation of the Chairmanship of Committees, but none was more important than that which devolved upon him in connection with the Commission for the Exhibition of 1851. He had come back to the body with which he had been officially connected in his early career. He came back to find that its affairs had become involved, that its finances were embarrassed, and that its prospects were gloomy. He set himself with characteristic resolution to the task of setting the house of the Commission in order, and one of the first steps which he took was that of becoming honorary secretary. It was a post of great labour, and of great responsibility, but there was no one better qualified for it than the man who, in 1851, had been one of the ablest instruments of the Prince Consort in carrying out the beneficent scheme of that year.

CUMBERLAND LODGE,

H.R.H. Prince Christian to Playfair. *March 26th*, 1884.

DEAR SIR LYON PLAYFAIR,—I have received your interesting statement with *résumé* of the position of affairs of the Commissioners of 1851. Having read that statement, it seems to me that there can be no doubt that it will be impossible for us to secure the services of a paid secretary. The question remains, therefore, whether you will be able—if you should be inclined—to undertake

for another year the duties of an honorary secretary. I feel that it is hardly fair to ask you to do so, or to sacrifice so much of your valuable time for the sake of extricating Her Majesty's Commissioners out of their difficulties. At the same time, I venture to express the hope that you may be able to carry on the business of an honorary secretary for another year, as I do not know how we shall get on in the present state of affairs without your valuable assistance. I have sent your letter to Mr Knollys, and asked him to lay it before the Prince of Wales as soon as he returns.

Believe me,

Yours sincerely,

CHRISTIAN V. HOLSTEIN.

The post which Playfair had accepted of honorary secretary he retained for several years afterwards, and the reader will presently have an opportunity of seeing how great was the work which he accomplished in that capacity.

Among the measures contemplated by the Government of Mr Gladstone in the Session of 1885 was one for creating a Minister for Scotland. Playfair held strong views as to the duties which such a Minister ought to discharge. He was not personally favourable to the creation of this office, but he was clear in his own mind as to the functions which ought to be exercised by its holder.

Playfair to Mr Gladstone.

SOUTH KENSINGTON,
December 8th, 1884.

DEAR MR GLADSTONE,—I am anxious to put before you some points regarding the Bill which will come before us next Session, creating a Minister for Scotland.

(1) If a Scotch Minister had merely Home Office work to perform, the natural thing would be that the Lord Advocate should look after his work in the House of Commons, and that the Scotch Minister should generally be in the House of Lords.

(2) But the Scotch municipalities wish to re-organise the office, and feel that the Minister would have small functions as a Home Minister. They therefore desire to attach Scotch Education to his office. No such desire has been shown by the School Boards. This combination would completely alter the nature of the Minister. He would then be chiefly Scotch Minister of Education with Home Office duties attached.

(3) In this altered position the Minister must not generally be in the House of Lords. You could not put the education of the people in charge of a Minister not in the House of the people. The Lord Advocate could not be his proper representative in the lower House, for he would have the functions of Attorney-General in England.

(4) Education in Scotland is the essential source of prosperity in a country which has scarcely any natural sources of wealth. The junction, therefore, of education with Home Office duties would entirely alter the conception of a new Scotch Minister. The Prime Minister, who selects for the office, would have to bear in mind the educational qualifications of his Minister as much as if he were appointing a Vice-President of the Council.

(5) I have never been in favour of a Scotch Minister, but if he is to be appointed, his function should be wide enough to justify his appointment, and in this point of view there are arguments for giving him the charge of Scotch education.

(6) But I think this would be a disastrous combination for Scotland, unless he were a House of Commons Minister, able to watch over the education of the Scotch people.

(7) This will be all the more necessary, because if you sever English from Scotch education (a policy of which I entirely disapprove), the differences between the two will raise many enemies in the House to the peculiarities of Scotch education established in relation to the higher subjects taught under the elementary grant. Unless, therefore, you have the Minister in the House of Commons, Scotch education, instead of gaining, will be materially deteriorated. I wish, with these convictions, merely to point out that the

proposed combination of education with Home Office duties in the new Ministry profoundly alters its original conception, and must be borne in mind in any Bill which the Government intends to bring forward.

As 1885 advanced, it became clear that the Ministry was not likely to survive the Session, but before the final catastrophe which led to Mr Gladstone's defeat and the accession of Lord Salisbury as Prime Minister took place, Playfair's views, set forth in the foregoing letter, upon the appointment of a Minister for Scotland had led to a crisis in his own affairs.

Playfair to S. H. Russell, Esq.

SOUTH KENSINGTON,
May 20th, 1885.

I write to tell you that I have finally broken off with my constituency of the Universities, and have formally announced that I will not seek for re-election. My reason for this is that the Government has introduced a Bill for separating Scotch and English education, and putting the former in the hands of a "Scotch Secretary" about to be created. This I highly disapprove, as I think it will be ruinous to Scotch education. But as many of my Liberal supporters approve of this step, it is clear that I cannot stand for a University when the Liberal voters are not united on an educational question. No doubt I shall be much censured for this step, but I do not feel bound to stand for a constituency that gives me a contest every time after seventeen years' service, when no other Universities disturb their members if they do their duty. I am already offered several seats, but I shall bide my time, and only take one which will both be safe and less expensive than that which forced a contest upon me at each election. Leeds and Dundee both wish to have me, and are negotiating with me. There are plenty of towns looking for candidates, so I do not intend being hasty, as it would not break my heart if I did not get into Parliament again; but this I do not think is likely. The old University members

are much distressed, as they think my practical expulsion from my seat will sound the knell for University representation. I hope it will not have this effect.

No sooner did it become known that Playfair had finally resolved to retire from the representation of Edinburgh, than he was overwhelmed with applications from constituencies in different parts of the country, anxious to secure him as their representative. His choice for some time, as the foregoing letter indicates, fluctuated between Leeds, Dundee, and Birmingham, but eventually he decided in favour of the first place; and in the autumn of 1885 was formally accepted as the Liberal candidate for South Leeds. The constituency represented the most Radical element of a Radical borough. South Leeds is inhabited almost entirely by working men, the artisans employed in the great engineering shops, and their foremen and overlookers, most of whom have themselves risen from the ranks. It would, in short, be difficult to find anywhere in the country a more democratic constituency than South Leeds. But democratic and advanced in opinion as it is, it represents the best elements in the working classes. The voters are a hard-headed and intelligent lot, and they are capable of appreciating superior intellectual qualities whenever and wherever they meet with them.

There could hardly have been a greater contrast between any two constituencies than that which existed between South Leeds and the Universities of Edinburgh and St. Andrews. Many of Playfair's friends felt somewhat dubious as to the wisdom of the choice he had made when he resolved to fight South Leeds as a Liberal candidate; but never were doubts more brilliantly dispelled than by the result of this experiment. No sooner had Playfair appeared among the electors of South Leeds than he won from them an almost enthusiastic appreciation, which quickly developed

into a feeling of warm confidence and affection. They recognised his wide knowledge, his experience, his great capacity for work; they rejoiced in his power of lucid exposition, in the homely arguments and illustrations by means of which he enforced his views; above all, they valued the sobriety and seriousness with which he discussed with them the great questions of the day. Claptrap was something that was hateful to Playfair throughout his life; and playful and gay as was his spirit in his moments of relaxation, he never allowed himself to be flippant or shallow when dealing in public with public affairs. He made it his business when about to address a meeting of working men in Hunslet (the district of Leeds which constitutes the Parliamentary division of South Leeds) to prepare himself as thoroughly for the duty as though he had to appear before a company of philosophers in Edinburgh or Albemarle Street.

Nor was this all. Whilst he took full advantage of the freedom he had now secured in order to give expression to those political opinions which he had firmly held throughout his life, he did not forget those less contentious questions which had absorbed so many of the years of his manhood. He spoke out with clearness and freedom on the political topics of the day, and left his auditors in no doubt as to the robustness of his political creed. But from time to time he diverted their attention from the burning topics of the hour in order to address them upon such questions as the future of English industry, the need for technical instruction of the English working men, and the economic doctrines upon which our commercial prosperity depends. To an outsider, accustomed to the ordinary course of a contested election in this country, it might have seemed that Playfair was making a great mistake when, instead of treating the working men of South Leeds to the flowing rhetoric and easy platitudes of the ordinary politician, he

called them together in order that they might listen to closely reasoned arguments, crammed full of facts and figures, on such questions as those I have named. Yet the end justified the means, and from personal observation I can testify that in the fierce electoral struggle of 1885 there were no meetings more densely crowded or more appreciative and enthusiastic in all the wide county of Yorkshire than those which Lyon Playfair addressed in the Mechanics' Institution and similar buildings in the manufacturing district of Hunslet.

This, it should be borne in mind, was the first occasion on which the redistribution of seats that followed the passing of the County Suffrage Bill was carried into effect. South Leeds was thus, to all intents and purposes, a new constituency. It was no longer a mere section of the great constituency of the united borough of Leeds. It had entered upon a new political life. Its candidate, soon to become its member, was in the same condition. He, too, had entered upon a new political life. No more interesting election took place in England during that year of 1885. It was not by any means a typical election. The reader has seen how small a degree Lyon Playfair had in him of the arts and practices of the ordinary candidate. There was something quaint in the spectacle which this man of years and learning presented when he stood up to appeal to a great working-class constituency, and sought to win their sympathies by instructing them upon topics which even in cultured society are regarded as too grave and serious to be tolerated unnecessarily. Yet, as I have said, the experiment succeeded. Playfair had found a constituency which suited him admirably, which he could influence and control as effectually as if he had been one of the born masters of oratory; and South Leeds had found a member whom it regarded with mingled pride and affection, and in whom it reposed a confidence which it never with-

drew from him during the remainder of his life. To many of us it seems a pity that Playfair was not permitted to enter upon this phase of his public life at an earlier stage. If he had done so, his career might have been still more remarkable than it was.

The struggle of 1885 was a severe one in Leeds as elsewhere. In the towns, the verdict given was adverse to the Liberal party, and if it had not been for the way in which the newly enfranchised voters in the counties rallied to the standard of Mr Gladstone, an overwhelming defeat would have been incurred. In Leeds, as in most of the great towns, the Liberal party received a severe check. Three of the five seats were won by Conservative candidates; but in South Leeds Playfair achieved a brilliant victory, and had a majority of 2,339 votes over his opponent. Those who were present in the Leeds Town Hall on the night of the election can still remember the calmness and dignity with which Playfair received the announcement of this signal victory. It was his first battle in the open, the first occasion on which he had taken part as one of the principals in an appeal to a popular constituency. Most men would have been excited and elated by the victory he had achieved; but Playfair was calm and collected, and his first thought was not for himself but for those comrades in the fight who had been less successful. One of these, as it happened, was an eminent scientific man, an old friend of his own. This gentleman, Professor Rücker, had stood in the Liberal interest for North Leeds, and had been defeated by a narrow majority. The present writer remembers the warm, almost tender, sympathy which was shown by Playfair to Professor Rücker, and the coolness and sound judgment with which he forecast the result of the General Election as a whole. His own personal victory, highly as he esteemed it, did not for a moment blind his eyes to the fact that the tide of battle was turning against his party, or

blunt his sympathies with those who had been less fortunate than himself.

Not many days had elapsed after the close of the General Election, when the country was startled by the news of Mr Gladstone's conversion to Home Rule. It is only necessary here to note a small incident which associates Playfair indirectly with the promulgation of this news. No man knew more accurately than he did all that was passing behind the scenes in different political circles. He was quick to observe, in December, 1885, certain movements among the leaders of the Radical section of the Liberal party, which seemed to him to portend something out of the common. He made it his business to ascertain what had passed at certain mysterious conferences between Mr Chamberlain and some of his political associates; and it was the communication of the knowledge he acquired on this subject that led directly to the publication of the statement in the newspapers commonly called at the time "The Hawarden Kite." This statement was the first intimation given to the public of Mr Gladstone's changed position with regard to Home Rule.

When the new Ministry was formed, under the presidency of Mr Gladstone, Playfair was offered the post of Vice-President of the Council—the position being in reality that of Minister of Education. It seems strange that he should have had to wait so long for a post for which he was so eminently qualified. Years before, his friends had congratulated him upon a rumour of his appointment to this office. The rumour was false, but the readiness with which it was accepted among members of all parties afforded evidence of the fact that public opinion had already pointed him out as the ideal Minister of Education. After all these years of waiting and of work, the prize which had once seemed so desirable was placed within his grasp. But the times were changed, and it was with unfeigned reluctance

that Playfair now consented, under the strong personal pressure of Mr Gladstone, and of his old friend, Lord Granville, to accept the post of Vice-President of the Council. He realised clearly that the Ministry, of which he thus became a member, was destined to have a short and stormy life. Convinced that the Irish question had reached a stage in which justice demanded that a large measure of concession should be made to the views of the Irish people, he was earnest and loyal in his support of the general policy of Mr Gladstone. But he cherished no illusions. The sobriety of judgment and keenness of apprehension which always distinguished him in his dealings with public affairs did not desert him now; and he realised that the Parliament of 1885 could never settle the Home Rule question. Nor was he blind to the fact that those who entered the Ministry of Mr Gladstone had to confront difficulties such as no previous Government of modern times had been called upon to face. Yet, under the pressure which was put upon him, and with a loyal obedience to the voice of duty, he accepted the office of Vice-President, and went sturdily to work, as was his wont, to snatch some good for the public from the stormy sea of political controversy.

The six months' Parliament of 1885 did little that was remarkable beyond shattering itself upon the rock of Home Rule. But one important Bill at least became law during its brief existence. This was the Bill for the organisation of the medical profession, which Playfair succeeded in carrying as Vice-President of the Council. Looking back, it seems strange that any measure could have been passed during that time of indescribable political tumult and agitation. But it was no surprise to his friends that, if such a success were to be attained, the man who attained it was Playfair.

AUTOBIOGRAPHY CONTINUED.—XI.

1884 to 1886.

IN the spring of 1884 the University of Edinburgh held its tercentenary. This was the best celebration of its kind which I have ever attended, and I have taken part in similar demonstrations in Emmanuel College, Cambridge, and at Harvard University, Massachusetts. Eminent men of science, literary men and jurists, came from all parts of the world and formed a gallant array in their academic robes, varying in colour from canary yellow and light blue to the sober black of our Scotch robes. There were three days of festivity during which there was ample opportunity of showing any defects in the organisation of the proceedings, but none were manifest. The students behaved with perfect decorum, which was a new feature in their gatherings.

There was some difficulty in getting a Royal recognition of this celebration on the part of the Queen, on account of her strong objection to vivisection, which she believed was carried on by the medical faculty of the University. The original charter of James VI. of Scotland (James I. of England) directed that the Edinburgh University should be called "our University," and as such should be specially recognised by the King and his successor. I wrote to the Queen's Secretary to this effect, and ventured to suggest that Her Majesty should send a message of welcome to the distinguished foreign *savants* gathered together to celebrate the tercentenary of *her* University. The Queen in reply said that she would gladly do so if I could assure her that no experiments on living animals were carried on within its precincts. It was easy to explain that we were celebrating the foundation of the University, not that of the Medical College, which was not even in contemplation when the former was founded. But the explanation was not deemed to be satisfactory, and, on the chief day of the celebration, the Queen started from London to Coburg without any recognition of the celebration from Her Majesty being sent

to the Chancellor. During the whole day I received telegrams from different parts of the Royal journey, asking for further explanations, which were sent by telegram in advance of the journey, and ultimately the Royal welcome was read at the great banquet in the afternoon. The Prince of Wales, to whom I had also written, remembered that he had been a student, and was then a graduate, of the University, and sent warm congratulations.

While on this subject it may be stated that two years later (1886) I attended, as delegate from the Edinburgh University, the celebration of the 150th year of Harvard University, which has done such signal service for higher education in America. The exercises on this occasion were simple and impressive, but without the splendour of the Edinburgh celebration. I had the pleasure to receive the degree of LL.D., which made my sixth doctorate. The admirable decorum of the Harvard students struck me as much superior to that of English and Scotch students.

In the year 1884 the British Association for the Advancement of Science met at Montreal under the presidency of Lord Rayleigh. The occasion was important, as it was the first time that the meeting was held beyond the seas. The charter of the Association uses designedly the words "British Empire." Science is catholic, and embraces the universe, but British science has a wide extension to colonies and dependencies covering 8½ million square miles, inhabited by 300 millions of people. This was the first attempt to federate science. Canada had a just claim to invite the British Association to meet at Montreal. There has been an active study of science in Canada. The Geological Survey, under the direction of Sir William Logan, had done excellent work. He was no longer alive, though his memory was bright to many of us. Logan came frequently to England, and co-operated with our scientific bodies. I think it was in 1855 that he came over to the French Exhibition in charge of a splendid collection of the mineral resources of Canada. It occurred to me that this would be a fitting occasion to recognise colonial science by conferring upon him a Royal honour,

and accordingly I wrote to the Prince Consort asking him to move the Queen to confer a knighthood on Logan, and this was graciously bestowed.

This was the first occasion on which colonial science received an honorary recognition. The people of Montreal subscribed for a commemorative piece of plate to celebrate the honour, and entrusted me with its execution. The plate was decorated with fossil flora and fossils discovered by Canadian geologists. A whole generation had passed since that event, and successors to Sir William Logan still laboured in illustrating the geology of Canada. Sir William Dawson and Mr Sterry Hunt were no mean representatives of that science at the Canadian meeting. I recollect that an important fact in science was communicated to the President of the Natural History section in an amusing way. He, with his wife, had been travelling by the Canadian Pacific Railway, and returned in time for the meeting at Montreal. Here he found telegrams from England awaiting his arrival, announcing the serious illness of his son. He telegraphed for the latest news, and a return message was put into his hands, which he gave to his wife that she might have the first pleasure of assurance that her son was better. She opened it and read: "The Duck-billed Platypus is oviparous"! This was telegraphed from Australia by an investigator, who had been sent to that country by the Royal Society in order to study the habits of the *Ornithorhyncus paradoxicus*. At that time I was President-Elect of the Association for 1885, and to show our appreciation of Canadian science, Sir William Dawson was elected President for 1886, when the meeting was to be held at Aberdeen. This federation of science should be extended to all the Anglo-Saxon countries of the world. Our great men are their great men. In literature, Shakespeare, Milton, Burns, and Tennyson; in science, Newton, Dalton, Faraday, and Darwin, belong to them as much as to us. A common possession and mutual sympathy should induce international gatherings of the investigators and promoters of science among the great Anglo-Saxon nations of the world. Before leaving

Montreal the McGill University gave some of us a pleasing memorial of our visit by conferring upon us the degree of LL.D.

In 1885 the British Association met at Aberdeen in September, when I acted as President for the year. It had met in that city in 1859 under the presidency of the Prince Consort, who then gave one of his admirable addresses on the relations of science to the State. This was made the subject of my address, with the advantage that science was now generally acknowledged as a handmaid of the State, its objects and purposes being far wider than those of statecraft. The meeting at Aberdeen was successful and enjoyable. The President has the least enjoyment of a meeting of this kind, because his duties occupy every moment of his time. During the week the Queen invited Lord Rayleigh (the President at Montreal) and myself to pay a visit to Balmoral. We arrived shortly before dinner, and found, in addition to the Queen and Royal Family, my old friend, Sir Stafford Northcote (afterwards Lord Iddesleigh), as Minister in attendance. After dinner the Queen spoke to me chiefly about the Prince Consort and his interest in science, but she did not intimate any desire to renew the conversation on the following day. Accordingly, as our presence was necessary in Aberdeen, Lord Rayleigh and I left the castle at six in the morning on our return to the duties of the Association. At eleven the Queen sent for us to attend at her rooms, and was astonished to find that we had departed, as she had intended to present us with copies of the various works which she has written on her Highland home. However, two days later the Queen sent Mr. Profeit, her land agent, to Tillypronie, the seat of Sir John Clark, which is about twenty miles from Balmoral, with whom I was then staying, and the prized volumes were delivered, each volume being inscribed with our names and with the Queen's signature.

The meeting in Aberdeen will be long remembered, by those who attended it, for its pleasant hospitality. The neighbourhood of Haddo House, where Lord and Lady

Aberdeen are such genial hosts, was used for both private and public hospitality. It was too distant for me to live at Haddo House, as I had to perform my duties as President, but we spent some days there. Our hosts in Aberdeen were Lord Provost Matthews and Mrs Matthews, and we could not have been better entertained.

My wife and I took the opportunity of being in Scotland to pay many long-promised visits among our friends. Our headquarters were with our friends Mr and Mrs Lyell (now Sir Leonard and Lady Lyell), of Kinnordy, the former seat of Sir Charles Lyell, the founder of modern geology. Lord and Lady Strathmore showed us the hospitalities of Glamis Castle. It was a delight to me, under the guidance of Lady Strathmore, to visit all the haunts about the estate which were dear to me nearly fifty years ago as a boy, when I spent my vacations with my uncle, Dr Lyon, the minister of Glamis.[1] Another friend, the Dowager Countess of Airlie, who then lived at Cortachy Castle, though she now lives "at the bonny house of Airlie," added to our enjoyment by her hospitality in both houses. Lady Airlie is often mentioned in the Memoirs of the Carlyles. She is a woman of much culture and charming manner. To my wife she has been long a devoted friend. The late Lord Airlie died in the United States, which he frequently visited, as members of his family resided there. When we could we made arrangements to cross the Atlantic together, and I have always regretted that we were not companions in his last illness.

There was a General Election in the autumn of the year 1885. Ever since 1868 I had been the Parliamentary representative of the Universities of Edinburgh and St. Andrews. I had to fight for my seat at each election, and the cost of the contests, always very heavy, was making serious encroachments on my modest fortune. This fact made me desirous to give up my seat. There was another fact which rendered this inevitable. All University seats are essentially Tory. I had represented the two Scotch Universities for a long period, as a Liberal, partly

[1] See *ante*, p. 32.

because I was intimate with the needs of my constituents, but chiefly on account of the excellent relations which always subsisted between me and my past pupils. When they graduated and became University voters, they still supported their old professor, regardless of his politics. In the course of seventeen years a new race of students had arisen, and they exercised a preponderance of voting power which eliminated the personal part of the equation in my favour.

I therefore felt that my chances of re-election in 1885 were hopeless, and declined to fight the seat again. Having been a representative of Universities for so many years, no popular constituency was likely to ask for my services, so I believed that my Parliamentary life had come to an end, and we departed to spend some months on the Continent. We had not got further than Paris when we were re-called, as no less than thirteen large towns in different parts of England, Scotland and Ireland offered to make me their representative. For some time I hesitated between Birmingham and Leeds, both of which towns sent influential deputations to London to offer me liberal support. Ultimately I fixed on the South division of Leeds, which was a manufacturing constituency of highly intelligent artisans. I feared that my academic style of speaking would be unsuited to popular gatherings, but it appeared that my constituents had made their selection because I attended to subjects of social welfare, such as public health, education, labour and trade, and they preferred that their member should represent them on these subjects rather than as a combative party politician, for which I never was suited by nature. The Tories started an opposition, but after a hard, though fair contest, I was elected by the large majority of 2,339 votes.

In the Parliament of 1886 Mr Gladstone appointed me to the office of Vice-President of the Council, practically the Minister of Education in the House of Commons, though he has miscellaneous duties to perform. There was little movement in education during this year, and my

chief work consisted in carrying through a Bill for the reform of the medical profession. Already between twenty and thirty Bills had been brought forward for this purpose, though all of them had been defeated by the jealousies of the numerous licensing medical examining boards. Nobody seemed to believe that my Bill would be more successful than its predecessors. It gave direct representation to the great body of medical practitioners upon the General Medical Council, and it abolished all partial licenses, making every medical man in future obliged to pass examination in the three subjects of medicine, surgery, and midwifery. By adequate firmness, combined with a spirit of conciliation, the Bill was steered through both Houses without a single amendment on its main principles, and by becoming law it settled the angry controversies of the medical profession.

In July, 1886, there was a General Election, owing to the failure of Mr Gladstone's Home Rule Bill for Ireland. Again I was returned for South Leeds, by the diminished majority of 1,741. A Parliament met in which a new Tory Government, under Lord Salisbury, was kept in power for six years by Liberal Unionists. This new Government soon forgot its promises at the General Election that a Coercion Bill was unnecessary for the government of Ireland. A Coercion Act of much severity was passed, and made perpetual. It was administered by Arthur Balfour with ability, though it was followed by the imprisonment of Irish members under circumstances of humiliation which roused the anger of the country, and ultimately led to its disuse. As Liberal Unionists were supporters of the Government and determined their majority, various Liberal measures, such as free education, local government for Great Britain, and allotments of land to the poor, were passed during the six years of Tory Administration. They were naturally Liberal measures daubed with Tory paint, and will give a future Liberal Government much trouble to rub off the paint and present them to the country in a more Liberal form.

Playfair to his Son. HOTEL LIVERPOOL, PARIS, *May 31st*, 1885.

MY DEAR GEORGE,—. . . I do not know whether you have noticed that I have given up my seat for the Universities. I felt the absence of active support, and did not care, under the circumstances, to spend my whole time in fighting for a seat that I was not likely to win. If they felt me indispensable to victory, I ought to have received more support, and a contribution to my expenses. Since my letter of resignation appeared, I have been much gratified by finding myself so much in request. I have received already invitations to represent Leeds, Bristol, Sheffield, Birmingham, Dundee, Paddington, Aberdeen, and Lanarkshire. Most likely I shall accept Birmingham as the most important town. I had nearly fixed on Leeds, but the Liberal Association has not fulfilled two of my conditions: (1) unanimity in nomination; (2) invitation from the two hundred selected Liberals. I therefore wrote at once to say I was quite free, and by next post Birmingham came in competition. Bright, Chamberlain, Broadhurst, and Schnadhorst are the other Liberal candidates there. The Committee wrote to me that they knew I was not a keen party politician, but that they selected me in honour of my efforts to mitigate the ills and to promote the well-being of the people by long labours in social reform. This is exactly the position which I occupy in the Universities, and its recognition by a large city like Radical Birmingham is a compliment which I much appreciate. By the time you receive this letter, you will probably see in the papers whether I have definitely settled with Birmingham.

As the reader already knows, it was not Birmingham which in the end secured Playfair as candidate. The South Leeds Liberals complied with his conditions, and he forthwith accepted the candidature which they had pressed upon him.

Playfair's correspondence with Mr Russell during 1885 and 1886 adds something to the story told in his Autobiography.

Playfair to S. H. Russell, Esq. SOUTH KENSINGTON, *December 5th*, 1885.

Your watch arrived safely, and has been much admired by us all. I shall value it exceedingly. We are getting the arms and monogram engraved on it, and inside, "To Lyon Playfair, from S. H. and Louisa Russell, 1885." It will be to me a precious memorial of the affection which both of you have given to me. I am about to get some more copies of my address, and will send you a small packet of them. We are in a thorough fix as to our political position. The Liberals are progressing firmly, but are only recovering their losses in the towns by the new voters in the counties. Still, we cannot expect more than seventy or eighty majority over the Tories. If we get the last number we should still be five under the Tories and Parnellites combined; and this makes Parnell master of the situation. Gladstone is much excited, and wishes to form a Government. This is, I think, a great mistake, for Chamberlain and the Radicals are not in an accommodating spirit. It would be better to remain in opposition, and let the Tories disgrace themselves by the alliance, and then go back to the country in another year for a new election. In any case the political situation is most critical. Some sort of Home Rule will have to be given to the Irish, but in their present temper they will accept none compatible with Imperial interests.

Same to the same. SOUTH KENSINGTON, *January 27th*, 1886.

Gladstone is again busy to-day, no doubt forming his Ministry. I do not think he appreciates me, or perhaps he measures me better than the House generally does. I doubt whether he will offer me office, and I am not inclined, if he does, to accept office, unless I were tempted by the Post Office, which I really like as work. But before this reaches you the telegraph will tell you all about the results of the change of Ministry.

Same to the same. ATHENÆUM CLUB, *February 4th*, 1886.

You will have heard to-day that I am Vice-President of the Privy Council. I was offered it yesterday but declined

it. I met Mr Gladstone at dinner at Marlborough House, and he told me how deeply he was grieved, and entreated me to reconsider my refusal. Lord Granville and Lord Spencer pressed me also very strongly. To-day I saw Mr Gladstone, and was received first by Mrs Gladstone. She told me that he was very poorly, and that I was the cause, for he was quite upset by my refusal. The G.O.M. then expressed his disappointment. He said that he knew I was in sympathy with him, and could not understand my reasons for refusing to join him; that as I had taken little interest in party politics he could not put me in the Cabinet, but that anyone who stood by him in his emergency had a right to look to that soon. Of course I had to yield, and so I am Minister. I made the condition that I should have a free hand in debate.

Playfair to Mr and Mrs Russell.

WINDSOR HOTEL, NEW YORK,
November 11th, 1886.

MY DEAREST PATER ET MATER,—A bright day and calm sea give us promise of a fair start, though we both leave America with heavy hearts. You both have been so supremely kind during our stay with you that we must have hearts of stone if we left you without great regret. I have enjoyed every moment of my time during my stay, and never felt even the sensation of dulness in quiet Nahant. You have adopted me so completely into your family that I feel as if I were leaving home for a strange country. When we reach home many duties will occupy both of us, though they will not exclude our thoughts of you.

Ever yours lovingly,
LYON PLAYFAIR.

CHAPTER XIII.

THE QUEEN'S JUBILEE AND INTERNATIONAL ARBITRATION.

AUTOBIOGRAPHY: The Jubilee Service in Westminster Abbey: Progress of the Nation during the Queen's Reign: Foreign Royalties: Representing England at the Centenary of the Declaration of American Independence: A Memorial to President Cleveland in favour of Arbitration: Opposing "Fair Trade": A Plea for Technical Education: The future Fiscal Policy of the United States. Legalising the Sale of Margarine.

THE following chapter of Playfair's Reminiscences does not call for much either in the way of introduction or of supplement from his biographer. It deals almost exclusively with the year 1887, with the Queen's Jubilee, which was the great event in home affairs, and with Playfair's visit to the United States in the autumn, when he was enabled to take an important part in connection with the movement in favour of a system of International Arbitration. About his own life at home during this year Playfair is almost entirely silent. It was, however, a life of work. The Jubilee celebrations laid a load of labour upon him in his position as Deputy-Chairman of the Commissioners of the Great Exhibition; whilst he was at the same time actively employed on a Royal Commission which had been appointed to inquire into the state of our endowed schools. His Parliamentary duties, though not at this time severe, were faithfully performed. He kept up his close connection with his constituents in South Leeds, and was as active as ever in promoting the cause of scientific and technical education in different parts of the country. In the early part of the year, Mr Stanhope, the Secretary of

State for War, invited him to preside over a small departmental Committee which was to be appointed to inquire into the alleged deficiencies in the cutlasses supplied on board our men-of-war. It seemed a curious subject upon which to enlist the assistance of Playfair; but the very fact that he was asked to undertake this minor though not unimportant task bespeaks the position which he had gained in Parliament as a general referee on all questions connected, however remotely, with science. For once Playfair was unable to comply with a request of this kind: and he declined to take part in this cutlass inquiry on the sufficient ground that he was already engaged in a much more laborious inquiry instituted by the State, and that his spare time was absolutely limited.

AUTOBIOGRAPHY CONTINUED.—XII.

1887.

TUESDAY, the 21st of June, 1887, will be long remembered as the Jubilee of the Queen, who ascended the throne in 1837. The ceremonial of thanksgiving was held in Westminster Abbey, which had been elaborately prepared for the occasion. The sum of £17,000 had been voted by the House of Commons for the purpose, and certainly was well and economically expended. There was no jarring effect by the galleries and the upholstery upon the venerable and impressive character of the Abbey. Every available space was filled, the galleries almost touching the roof; but when filled by persons in uniform, military, naval, civic and diplomatic, and by ladies in semi-state dresses, the picture was one of great beauty. To do honour to the Queen there were four Kings—viz. those of Belgium, Saxony, Greece, and Denmark; two Queens, one of Belgium, one from the Sandwich Islands. The choir, transepts and sacrarium were occupied by princes, members of the two Houses in Court dresses, judges in their scarlet robes,

diplomatists covered with orders, and a general public in its best attire, forming a resplendent ten thousand. The daïs was placed under the lantern, and was carpeted with crimson cloth ornamented with the Cross of the Bath. In the middle of this was the Coronation chair, covering the old gray stone brought from Scotland, upon which so many monarchs have been crowned. That, however, was concealed by cloth of gold thrown over it. When the Queen's procession came in, headed by the clergy in their gorgeous copes made in the time of Charles I., and only worn at great State ceremonies, the scene was most imposing. The foreign kings and princes sat facing the throne, while the Royal princes related to the Queen either by descent or marriage stood on her right and the princesses on her left. My seat, as a Privy Councillor, was the second row next to the daïs, so that I had an excellent place from which to witness the ceremony. Among the princesses, the Princess of Wales, exquisitely dressed in white, eclipsed all others by her grace and beauty. The Queen was visibly moved. The musical part of the religious service began with the *Te Deum Laudamus* of the late Prince Consort. This had been naturally selected by the Queen, though much doubt was felt as to whether it was suited for such an important occasion. It was originally written for soli, chorus and orchestra, but had been adapted to organ and brass instruments. It is in the key of C, and had a solemn, devotional, and impressive effect.

After the religious service had been completed a scene very unusual in a church took place. The Prince of Wales approached, bent low, and kissed the hand and then the cheek of the Queen. Then the Imperial Prince of Prussia and the Duke of Hesse, her sons-in-law, knelt and kissed hands, but were not saluted on the cheek. All the Royal Princes and Princesses followed in turn to receive the double salute. The Queen then seemed to remember that she had not shown this mark of favour to the Prince of Prussia and the Duke of Hesse, who were recalled and saluted on the cheek. The repetition of this gracious act might seem to have a curious effect in a church, but it was

done with so much dignity that it simply appeared to be a befitting act of love and recognition on both sides. Beautiful as the Abbey was on this occasion, I fancy that the state of the streets and houses in the line of procession must have been still more interesting. To me the whole celebrations of the day were full of memories. All the sons and daughters of the Queen I had known as children, and it was interesting to see her grandchildren nearly as old as I was when I first knew their parents.

The Queen must have had many recollections of love, sorrow, and pride in this day. Her kingdom is much more advanced in well-being and in intellect than it was in 1837. When I returned from the Abbey I tried to make comparisons of the advance in civilisation by taking several subjects as indices of progress. My old scientific master, Baron Liebig, used to say that progress was best shown by the consumption of soap, inasmuch as cleanliness is next to godliness. If that be a true index, progress has been small in this country, for each head of the population consumed 7¾ lb. of soap in 1837, and in 1887 it has only increased to 10 lb. per head. The price of rags is a truer measure of civilisation, because, when converted into paper, it gives the measure of intellectual diffusion. The comparison is very favourable to the fifty years of the Queen's reign; in 1837 only 1¼ lb. of paper was consumed by each person in the population, whereas now 12 lb. are consumed. Even as regards other countries England stands at the head of this index of civilisation in 1887:

The United Kingdom	12 lb.
United States	10 ,,
Germany	9 ,,
France	8 ,,
Italy	4 ,,

Switzerland would stand high, but the figures are not available. If further statistics are required in corroboration of the intellectual advance, it may be mentioned that in 1837 each person of the population spent annually less than two shillings per head on books and newspapers; now nine shillings are spent. When the Queen ascended the

throne nine letters were posted by each individual: now thirty-eight stand to the credit of each. It would be absurd to ascribe the amelioration in the physical, moral, and intellectual condition of the people to the immediate action of the throne. The marvellous progress of science and the abolition of class privileges have been the main causes of improvement. The Queen has deserved the love and gratitude of her people by her constitutional action as a Sovereign, and by her concern for the welfare of her subjects. The Court influences social life, and it is well for the country that throughout her long reign she can appropriate Tennyson's lines:—

> " . . . . thro' all this tract of years,
> Wearing the white flower of a blameless life,
> Before a thousand peering littlenesses,
> In that fierce light which beats upon a throne."

The Jubilee week did not pass over without the usual jealousies and misunderstandings. The Queen certainly did her part of the hospitalities without stint. Buckingham Palace was filled to overflowing, and Buckingham Palace Hotel had its sign taken down, and became a *dépendance* of the Palace for the occasion. It was said that one official in the Royal kitchens was so overwhelmed with his work that he threw himself into the Serpentine, but was fished out alive by the police. Holkar, great as an Indian prince, found himself only a small prince in London. The only person who found herself greater in England than in her own dominions was the Queen of the Sandwich Islands. This potentate refused a guard of Hussars, and said she would not leave the hotel unless Life Guards were sent to her as a crowned head, and she got her way. Another story was that the actual kings struck, and refused to give their arms to the sable queen at the State balls, so the Duke of Edinburgh and the Duke of Connaught had to discharge this duty. It was surprising how well this island queen maintained her royal dignity. I waited upon her majesty one evening, and she received me and conversed through an interpreter in excellent style.

One of my most pleasant recollections of the Jubilee week was an evening at the house of the Duc d'Aumale. He had invited only six English friends in all, including my wife and myself, but his house was full of the French and Spanish princes who had come over to attend the Jubilee. Among the most delightful of these was the Infanta Eulalia of Spain, sister to the late king. She spoke English perfectly, as in fact do all the younger generation of Continental Royalties. The King and Queen of Portugal were at the party, the latter being a daughter of the Comte de Paris. We again met them on the following day, when we dined with the Portuguese naval *attaché*, the Count de Sena, at a banquet given to the King and Queen of Portugal. Their Majesties were as agreeable as they had been the previous evening.

The Queen founded a Jubilee medal as a memorial of her fifty years' reign, to be worn as a decoration. I received one in memory of my relations with the Prince Consort.

I had occasionally opportunities during my autumnal visits to America to show my friendly feelings for the people of the United States. In this year (1887) I found occasion to forward an idea which I have long entertained, that there should be an intimate union of heart and interests between the English-speaking people throughout the world, and more especially between England and the United States. The centenary of the Declaration of Independence was held at Philadelphia on the 17th September, 1887. It was celebrated with great rejoicings in the presence of the President, the Governors of the States, and about 25,000 troops sent to take part in the celebration. The Centennial Commission, over which Mr Kasson presided, were desirous to have England represented at this great festival, and they invited Mr Gladstone and Mr John Bright, who both declined on account of their age and occupations. Failing these great men, the Centennial Commission invited me to take part in the ceremonies. At first I declined, as I did not think myself of sufficient importance to act as a representative of England, but when

I found that no other Englishman would be present to answer for the sentiment of "England, our Mother Country," I yielded to a second pressing invitation, and went to Philadelphia, where I was received with much kindness as a guest of the Commission. The celebration lasted three days, and was interesting throughout, but my own part in it was limited to the last day, when the great meeting and banquet were held. Behind the Hall, in which the independence of the United States was declared, and the Constitution framed with such consummate wisdom, an immense platform had been built. President Cleveland, supported by the chief officers of his Cabinet, by the Governors of the States, by the judiciary and by the invited guests, sat among a circle of people which made this centennial celebration more remarkable than any that can be held in future times. For on the platform around the President were the grandsons of nearly all the men who built the constitution and signed the famous charter. When another centennial celebration comes round this link between the past and the present will have disappeared. Beyond the platform in the Square was an immense concourse of people who patiently waited for the conclusion of the orations, not one word of which could have reached their ears. The whole surroundings made the ceremony most impressive.

A little incident occurred as I left the platform which showed the good temper prevailing among the crowd. As I was trying to push my way through, an American working man addressed me good-naturedly as "John Bull," and asked me to shake hands. "Well," he said, "if our two countries would only feel as friendly to each other as I do to you as an Englishman, the peace of the world would be preserved." This gave me courage for my part of the work of the day. The great banquet to celebrate the event was held in the Academy of Music. The tables were classified; thus there was a table for Governors, one for Congress, one for Science, one for Senators, and so on. My place was at the Science table, where I found my University friends. The galleries were filled with ladies,

conspicuous among whom was the beautiful and graceful Mrs Cleveland, wife of the President. The acoustic properties of the Hall, that night at least, were bad, and few of the speeches were audible at my table. I felt, if I spoke from my seat, not a word would be heard throughout the Hall, so when the toast of England was about to be proposed I went up to the Senators' table, at which I was warmly welcomed, and spoke from that place. The toast of "England, our Mother Home," was proposed by the Chairman, and most warmly received. I had been told that it was a critical sentiment to answer, as there was a good deal of irritation in regard to the Fisheries question, and I had been advised to avoid all thorny points. If there were any such feeling it was not manifested in the slightest degree, for the whole of my speech was received with the warmest acclamations.

Next day I received from Professor Pepper, the Chairman of the banquet, the following letter :—

"I am sorry that I did not have the chance of telling you how delighted I was with what you said on Saturday evening. It was the opportunity of the evening, I think, and I am sure you took advantage of it. Everyone was so greatly pleased with your speech."

The speech itself was as follows :—

It is impossible for an Englishman to reply without emotion to a toast such as this, or without mingled feelings of pride, humiliation and confidence. With pride, because this celebration is the triumph of the principles of political liberty, and of constitutional government of a people by the people, in entire accord with the great traditions which have made England the cradle of political liberty. With humiliation, because England, in the reaction which followed the Cromwellian revolution, and which lasted until the close of the reign of George III., forgot many of its old traditions, and in its relation to the American colonies tried to suppress, instead of to foster, the growth of government by the people. With confidence, because England and the United States now know that they are the chief guardians of political liberty and constitutional government throughout the world, and that they ought to be linked for evermore by the bonds of friendship and kinsmanship.

On such an occasion as this you will not desire that I should refer to the political blunders of England which led to the wars of

independence and of 1812. In our present mood you would rather acknowledge the benefits which you have received from the mother country in laying the foundations of constitutional government. Your ancestors brought with them, as their most precious birthright, the principles of constitutional liberty. The Magna Charta, the Habeas Corpus Act, the Bill of Rights and the common law are your safeguards for liberty as they are our safeguards in England.

Cromwell was the political father of Washington, because both were champions of individual and constitutional liberty, and they both taught kings that government can only secure permanent obedience when it consults the safety and happiness of the people. The Acts which led to the outbreak at Lexington and the battle of Bunker's Hill were in themselves not very oppressive, but they were a continuation of slow and constant interference with the natural growth of constitutional liberty. The whole country uprose after the final Tea Party which was given to the British at Griffin's Wharf in Boston, because the people knew, though they had scarcely felt the tyranny, that the mere exposure to it was the destruction of freedom.

> For what avails the plough or sail,
> Or land or life, if freedom fail?

How I wish that either of those whom I am proud to call my friends—William Gladstone or John Bright—were here to-day to reply to the toast now given. I am only a humble Englishman, half scientist, half politician, with no other claim to address you than the fact that while I ardently love my own country, I warmly love yours also. I speak in a city which framed the Declaration of Independence and built the constitution. If Boston may claim the credit of infusing fresh blood into the young commonwealth, it was in Philadelphia that its brain was nurtured and matured.

The occasion of this celebration, the place and all its environments, inspire thoughts, but do not fit them for condensation into an after-dinner speech. I shall say nothing more as to your war of independence beyond this, that without it you would never have become a great nation. Great nations must have a history, and that war created history for you, and gave you illustrious traditions and ancestors of your own to whom you can point with pride as the founders of your fatherland.

This day we are celebrating your second, though peaceful revolution. It is true that the thirteen States had become a nation by a loose confederation. But that nation, though of one promise, had thirteen performances, and no nation has ever preserved its unity with even two executives. It was therefore a veritable revolution when the convention of 1787 framed that marvellous production of human genius, political foresight and practical sagacity—the constitution of the United States. Its first words: "We, the people of

the United States," not "We, the States," show the greatness of the revolution. It was as if the people had instructed the convention in the words of Shakespeare: "We must have liberty withal, as large a charter as the wind."

The Anglo-Saxon spirit breathes through every word of the constitution. Notwithstanding your boundless and continuous territory, its framers recollected that great free nations only succeed when they are composed of smaller States, because there is a longing among men of our race for local independence as opposed to centralisation. With what skill and wisdom were the executive powers given to the nation while all the essentials of local government were reserved to the States. Ah, there were intellectual giants in those days. When will you, or the lovers of liberty throughout the world, ever forget the names of the master-builders of the constitution—Washington, Hamilton, Sherman, Madison, Pinckney and the aged Franklin? It does not lessen, but it enhances the value of the constitution that the best parts of English constitutional law are preserved in it, set like jewels in a golden casket. Hamilton gloried in this fact at a later time. And so the constitution, both in its inception and execution, even in your last terrible struggle for unity, has remained the bright polar star of liberty. When I think of it I feel inclined to exclaim, in the words of Shakespeare: "How beauteous mankind is! Oh, brave new world that has such people in't."

But in speaking of the object of this celebration, I have left but a few moments to reply to the sentiment of the toast, "Our Mother Country." The people of the United States, as well as the people of the United Kingdom, are the joint and common possessors of their respective glories and traditions. Shakespeare, Milton, Bacon and Locke, Burns, Scott and Moore are your great authors, as they are ours. When I see their statues in your parks or museums I think it quite as natural as when I see the monument of Longfellow in Westminster Abbey. As you grow older in history our great Walhalla in London will claim its right to possess a record and share in the illustrious men born on this side of the Atlantic. Even now, Emerson, Longfellow, Wendell Holmes and Whittier are the cherished inmates of every cultivated English home. Hume and Macaulay teach history to your schools, just as Prescott, Motley and Parkman extend historical knowledge in England. Science has no country, though its investigators have birthplaces. In Philadelphia I, as an ex-professor, cannot forget that one man, to whom all my life I have given hero-worship, lived and laboured in this city. In his old age he co-operated with Washington to humble King George III. But before that he had actually swept out of the universe a much more powerful prince. When Benjamin Franklin drew down lightning from the clouds he freed religion from a degrading superstition. Till then the "prince of the power of the

air" troubled the world with thunderstorms, and Popes blessed bells and set them ringing to frighten the turbulent prince. Franklin was more powerful than the Pope, for he knocked the prince on the head. "*Eripuit cœlo fulmen sceptrumque tyrannis.*" Another of your great Americans, Benjamin Thompson (Count Rumford), taught mankind the correlation of forces and founded the Royal Institution in London, which has produced a Davy, a Faraday, and a Tyndall. It was right that an Englishman should found your great Smithsonian Institution at Washington.

Long may we cherish our common possessions and national sympathies! When America rejoices, England is glad. When you mourn a great national calamity, we join in your grief. When Lincoln and Garfield fell by the acts of assassins, the colours of English ships all over the world were lowered "half mast" in honour of their great names. At the death of your great general, Grant, I felt I was with you in body and spirit when I, with some thousand Englishmen, attended the solemn services at Westminster Abbey in commemoration of his services to your country, and to the cause of liberty throughout the world. When Ireland, unhappy Ireland, suffered from famine, we do not forget that the United States sent over a frigate laden with provisions for the starving people. Your acts of sympathy with us in our joys and sorrows have been many. Let us continue to cherish our common glories and past traditions, and never cease to aim at a community of interests and pride in our national prosperity. It is no insignificant evidence of the friendly feeling now existing between England and the United States that a memorial signed by more than two hundred Members of Parliament is about to be presented to the President, urging that any political differences which may from time to time arise between the two countries should in the last resort be settled by arbitration. This memorial is the actual outcome of the working men of England, who have pressed it upon their representatives.

I know that I have been far too long, but you will forgive me, because the toast unites two great nations in one sentiment. The small islands in the northern seas, from which your ancestors came to found this great nation, even now contain only 36,000,000 of people, while already you have 60,000,000, and have in your vast continent an immense potentiality of growth. We know that you must become our big brother, and we ask you to cherish in the future that feeling of pride in our common ancestry, and that sympathy for an allied people, which we now possess. If we do so the great Anglo-Saxon race throughout the world will become a security of peace, and a surety for the continued growth of constitutional liberty.

On the 31st October, 1887, a remarkable memorial in favour of a treaty of arbitration between Great Britain and

the United States was presented to the President (Cleveland) at Washington. It was signed by 233 members of the House of Commons, or by more than one-third of its whole number. Originally this memorial was promoted by the Peace Society of Working Men, and was taken up by the Labour representatives in the House of Commons much more warmly than that society could have anticipated. Some of the working-men representatives in Parliament desired to join in the presentation of the memorial signatures, and came over for that purpose. I fancy that funds were provided for them by Mr Carnegie, the liberal iron manufacturer of Pittsburg. Other Members of Parliament came over at their own cost. As none of them had official Parliamentary rank, they desired that, as I was then in Boston, I should come to Washington and head the Parliamentary deputation. A telegram urging me to do this was sent by the British Minister, Lord Sackville. Mr Carnegie made all the preliminary arrangements for our reception by the President. The memorial was then presented to the President by me with the following remarks:—

Mr President: I have the high honour to represent a deputation of twelve Members of Parliament who present to you, as the head of this great nation, and through you to Congress, a memorial in favour of the arbitration of political differences when diplomatic agencies have failed to adjust them. This memorial has been signed by 233 members of the House of Commons, or by more than one-third of its whole number. It is really the outcome of an ardent desire on the part of the working men of the United Kingdom to perpetuate the friendship and peace which now happily exists between the kindred people on both sides of the Atlantic. The representatives of the people have given expression to this feeling among the constituents by signing the memorial. Even if it do not effect an immediate or proximate treaty of arbitration, you will, Mr President, recognise that the memorial is a remarkable expression of the brotherly feeling which our working classes entertain for their kinsmen in the United States. International arbitration, if established, would only be one step further in the history of civilisation. When individuals quarrel, society does not permit them to settle the dispute by violence, but it refers them to courts of equity or law, in order that the differences may be composed. Why should not this principle be extended to nations, especially when, as in the case

of the United Kingdom and the United States, they are allied by blood and knit together by love? We are both the common inheritors of the traditions and glories of the Anglo-Saxon race from which we have obtained the spirit of conciliation, a spirit that has so aided the national development of both countries.

The time is favourable for a consideration of the question, because the whole world is startled at the new aspect of war, which the progress of science is making a huge engine for the brutal butchery of men and the wanton waste of property. Its increasing cost threatens the basis of national credit, and even of national solvency. In ten years the cost of European armaments has increased by at least twenty-five per cent., while it amounts to three per cent. of the whole earnings of Europe. The United States almost alone among nations can keep down its combatant expenditure, because it does not consider it necessary to anticipate war with foreign nations. It is here, therefore, rather than in Europe, that the proposals for treaties of arbitration might naturally be made. At all events we might devise a treaty of arbitration between the United Kingdom and the United States. That would be a glorious example to other nations, and might lead to the two great Anglo-Saxon nations being the peacemakers of the world. That is the feeling which has induced so many Members of Parliament to offer their co-operation to Members of Congress in settling political differences by arbitration. If our two countries succeed in doing so, it will give an eminent illustration that nations as well as individuals can compose their differences without violence, by adherence to the principles of equity and of international law.

President Cleveland admitted to me in private conversation that his feelings in favour of international arbitration were warmer than those expressed by his speech. The Presidential Election was impending, and he had not viewed with favour the presentation of the English memorial, because he feared that the deputies might make some compromising remarks. In this fear he was agreeably disappointed, and he promised to submit the memorial to Congress. This was done, and in April, 1889, a joint resolution of the House of Representatives and the Senate adopted the principle of international arbitration, authorising the President to make treaties with friendly Powers for carrying it into effect. An article by me in the October number (1890) of the 'North American Review' discussed the subject in detail.

Undoubtedly the Government of the United States is best fitted among all nations to promote the cause of international arbitration. It is strong in its resources, and is free from the national jealousies which prevail in Europe. But the democracy is divided into parties, and the need of parties to secure votes causes a fickleness in its policy and an undue susceptibility to supposed insults. This makes Europe afraid of the continuance of its friendship. All this will disappear when there is increased consolidation of interests in its vast area. When we are struck by the unwisdom of legislation in the United States we forget its youth. England not long since, in the time of Walpole, had Parliamentary faults far greater than those we lament in the Congress of the United States. The British Parliament has purged itself of many political errors, and so will the Congress by the light of time and experience.

On returning from America in the autumn of 1887, I found that there had been a gathering of delegates of Conservative Associations at Oxford. The chief subject discussed was "Fair Trade," which is nothing but Protection disguised in a domino. A resolution which, if it meant anything, indicated taxation of food and foreign imports, was passed at a meeting of a thousand delegates, only twelve hands being held up against it. The resolution was as follows:—

"That the continued depression in trade and agriculture, the increase in the scarcity of employment, and the consequent distress among all classes, render speedy reform in the policy of the United Kingdom as regards foreign imports and the influx of indigent foreigners a matter of vital necessity."

Little notice of this meeting was taken by our leading politicians, as they found that the constituencies cared only for speeches relating to Ireland. I felt the danger of letting the Tories sow tares in our fields while the Liberals were asleep, so I went to Leeds and addressed my constituency "On Fair Trade and the Depression in Agriculture." This speech attracted much attention, and was printed and largely distributed, to the extent of 40,000 copies, by the Cobden Club. About 100,000 copies were quickly sold by

the publishers. Among many letters which I received, thanking me for "having pricked the bubble of Fair Trade," the following one was from the great apostle of Free Trade, John Bright.

John Bright to Playfair. *January 15th, 1888.*

MY DEAR PLAYFAIR,—I have a copy of your speech, sent by you, I suppose. I thank you for it, and for the speech itself, which I think one of the best, if not the best, spoken on the question. I do not know anyone but yourself who could have dealt so admirably with the subject of it.

Yours sincerely,

JOHN BRIGHT.

The purport of my speech was to show that depression in modern times had nothing to do with the fiscal arrangements of nations. They were universal and synchronous in all machine-using countries, and depended upon the revolutions in manufactures and commerce which had been produced by modern inventions. The world had not yet adapted itself to the new applications of science, which had dislocated all forms of labour, lowering the value of labour of quantity, which is little more than brute animal force, and heightening the value of labour of quality, guided by skilled and trained intelligence. The depressions due to this dislocation of labour and to the cheapness of all commodities have occurred in all countries, whether they be at peace or war, whether they have Protection or Free Trade, whether they have a gold or a bimetallic currency. A universal result must have a universal cause, and that is the rapid interchange produced by the electric telegraph, the facilities of distribution through improved steam communication by sea and by land, and the substitution of machine for manual labour. It was necessary to follow up the Free Trade speech by a series of proofs of the major proposition. Accordingly I made a speech on the dislocation of labour at the City Liberal Club in London, and enlarged it into

an article for the 'Contemporary Review' of March, 1888. Shortly afterwards I addressed a meeting of the National Liberal Club "On Industrial Competition and Commercial Freedom." This address also was largely circulated by the Cobden Club, and produced the following letter from Mr Gladstone :—

Mr Gladstone to Playfair.

HAWARDEN,
May 28th, 1888.

MY DEAR PLAYFAIR,—I cannot sufficiently thank you for your admirable tract; so comprehensive, clear, simple in statement, rich in illustration. I hope it will draw attention, and I feel bound to send this copy to our Reading Room here. In two points I should like to strengthen a little what you have said, from the recollections of my youth. You speak of seven or eight months as the term of the double passage to India. My father sent the first private ship to India. He built the largest *high class* ship that had ever sailed out of Liverpool, the *Duke of Lancaster*. He also built (I mean owned, for the actual builder was Wilson) the fastest ship known in the long voyages of the time, the *John o' Gaunt*, which used to get 10s. to 20s. per ton extra freight from China because she was pretty sure to arrive first. She would certainly have performed the double voyage in the time you name. But earlier, say in 1820, four months was the quickest voyage from Liverpool to Calcutta, five months being more common; and from the absence of postal arrangements, the ordinary return of post from India was near twelve months. I write from memory, but memory of earlier events is for an old man clearer and safer than of later ones. Then as to manning. The *John o' Gaunt* was about 420 tons, though I do not recollect her complement of men. The *Duke of Lancaster* was 560 tons (found too large as things then went), and the crew all told were thirty-three—you may say six men per 100 tons; so the number you give as forty per thousand tons in 1873 would have been a short time further back sixty.

At that time, in the glorious days of the Navigation Law, the American liners carried everything worth having

between the two countries, and the English had only th scum and refuse of the trade. How beautiful they looke sailing out of the Mersey with all their canvas spread, an their light brown hulls! We cannot meet with that sigl now. Again thanking you, and with our best compliment to Lady Playfair,

I remain,

Sincerely yours,

W. E. GLADSTONE.

In all of these addresses relating to industry the necessit was enforced for increased technical education of th people. The following is an extract from the address t which Mr Gladstone refers :—

You will readily comprehend from my argument in what manne we must prepare to keep our position in the increasing struggle c nations. We must give more of a trained intelligence to our prc ducers, intelligence to the rank and file, high technical education t the officers of our industrial armies. What is technical education It is simply the *rationale* of expert empiricism. We must convert as much as we can do, labour of quantity into labour of quality We now know with tolerable certainty the conditions which produc low wages, and those which produce high wages. Our interest as nation is to aim at the latter. What class of labourers produc dear things? They are ignorant labourers with faint ambitior who are badly housed, badly clothed and fed, who have fe pleasures of the mind, and who trust to the Poor Law to stan between them and starvation. These are the labourers who ar content to work for low wages, but the product of their labour i low and its cost is high. What class of workmen produce chea things? They are the working men of technical skill and traine intelligence, who seek more education for themselves and childrer because they know that it both dignifies and fructifies their labou They are men who, by combination, have raised their position an shortened their hours of labour, so that they may enjoy some of th pleasures as well as take their share in the toil of the world. The hate the workhouse as much as they hate that kingdom over whic the devil is supposed to reign. Their wages are high, but so is thei productiveness, and consequently they give us our cheap thing They are the men who are the props of our industries. Thoug their wages are high they are cheap at the price. Protection is nc

a force to raise wages. If it were they should be high on the Continent of Europe. The interest of a labourer is to sell his labour dear and to buy his commodities cheap. Protection enhances the price of the latter; but how can this benefit the labourer? Though the labourer does not gain by Protection, the monopolist does, and it is he who is encouraged and over-remunerated by high tariffs. England has abolished monopolies, and refused to support privileged classes by taxation. She is a country small in area and limited in population, but great in productive energies. She is a world-wide trader, because her manufacturers can barter on advantageous terms with other nations which seek her free ports for the disposal of their commodities, and are forced to accept English goods in exchange. The industrial prosperity of England is as much due to commercial freedom as her social condition is due to her political liberties.

Of course my visits to the United States enabled me to give ample illustrations of the effects of Protection in that country. At the present time (1889) that country is on the top of the wave of Protection: it will ere long be in the trough of the sea. It will take many years before the United States can pursue the wise policy of moderate tariff duties for revenue. When it reaches this point England will find its greatest competitor in the foreign markets of the world; though I have such profound conviction of the benefits of Free Trade that I believe the ultimate result of its adoption by the United States will be to benefit the trade of England also. At present the United States has a large area of internal Free Trade, inasmuch as there is no tariff line between the boundaries of its separate States. When its manufactures have grown into a surplus beyond the demand, a clamour will arise for freedom of commercial intercourse with the outside world. The first efforts will be for reciprocity between the United States and Pan-American markets, and in course of time these will extend to trade on fair terms with all foreign countries. I was much blamed by the American Press for writing an article on the Presidential Election, in which I stated that the next election would be carried out upon a platform of commercial reform. Perhaps I may live long enough to witness one more General Election of this kind in 1892, and then I shall see the fulfilment of my prophecy.

It is hardly necessary to say that Playfair's hope was gratified. He lived to see not only the Presidential Election of 1892, but that which came four years later; and with regard to both, his prediction of the character which political contests in the United States were likely to assume was amply realised.

Playfair makes no mention in his Autobiography of one of the incidents of the Session of 1887. This was the passage of a Bill which, under certain conditions, legalised the sale of margarine as a substitute for butter. With that severely practical turn which distinguished him in most things, Playfair strongly advocated the cause of margarine. Though it was not butter, it was a harmless and palatable substitute for it, infinitely to be preferred to butter of an inferior quality or in bad condition. This was Playfair's contention, and though it was hardly a popular one, it was not the less stoutly maintained on that account. His share in making "the poor man's butter," or, to be strictly accurate, substitute for butter, easily procurable was not a small one.

CHAPTER XIV.

"BARON PLAYFAIR OF ST. ANDREWS."

A Touching Incident. AUTOBIOGRAPHY: Opening of the Glasgow Exhibition: Mistaken for a State Prisoner: Death of the Emperor Frederick of Germany: The Widowed Empress and Prince Bismarck: Resigning the Honorary Secretaryship of the Exhibition Commission: A Presentation: Supporting a Royal Grant: The General Election of 1892: Raised to the Peerage: Farewell to South Leeds. The South Leeds Election—An Interesting Colloquy—Appointed a Lord-in-Waiting to the Queen—Letters from Windsor Castle—Work on the Aged Poor Commission—Grand Cross of the Bath—In Canada.

PLAYFAIR'S Reminiscences in a connected form may be said to have come to an end with the chapter in which he dealt with the Jubilee of 1887. He himself lived to take part in the Diamond Jubilee ten years later, and to set on foot in connection with that great celebration the movement for its national commemoration which was subsequently adopted by Parliament. But after 1887 the demands upon his time and strength were such that he had but little leisure for continuing his autobiographical work. In this chapter I propose to include the two final instalments of the Reminiscences, and their fragmentary character sufficiently indicates the fact that they cannot be regarded as a complete record of his life during the term with which they deal. Yet the ten years which remained to him of public labour after 1887 formed by no means the least useful or important stage in his history. From first to last they were years of unceasing activity, and they included some of his most valuable services to his country and his fellow-men. The story will be gathered more from

his correspondence and the concluding chapters of this work than from his own Reminiscences.

Playfair to his Sister-in-law. SANDRINGHAM, NORFOLK, *January 15th*, 1888.

It is curious that there are two people here—the Turkish Ambassador, Rustem Pasha, and Sir Edward Bradford—who have been maimed by wild beasts. The latter had the whole of his left arm up to the elbow joint munched away by a tiger; and the Turkish Ambassador has half his right hand and part of his left torn away by a bear. Both tell me that they felt no pain during the mutilation, and they suppose that their intense desire to defend themselves prevented them from feeling the pain. Livingstone, the African traveller, when his arm was munched by a lion, told me the same thing—that he could not recollect having suffered any pain.

It was during Playfair's visit to the United States in the autumn of 1888 that a touching incident, referred to in the following letters, took place. He visited the Perkins Institute for the Blind at Boston, and was greatly interested in the case of one of the children, a little girl named Edith Thomas. This child had been deaf, dumb, and blind from birth. When Playfair saw her, she had on one of her fingers a little brass curtain ring, the possession of which seemed to afford her much satisfaction. Always fond of children and full of sympathy with the afflicted, Playfair's heart was moved by the condition of the child. He returned to the Institute next day, carrying with him a pretty finger-ring, which he left for the child, who received it with delight.

Isabel Greeley to Playfair. KINDERGARTEN, PERKINS STREET, BOSTON, U.S.A. *November 8th*, 1888.

SIR LYON PLAYFAIR,—The little deaf, dumb, and blind child was very happy over the ring you so kindly

sent to her, and she has written you the enclosed, which can scarcely be called a letter, but it is her *second* successful attempt at writing one. The first was written to Mr Anagnos about a week ago.

I am,

Sincerely yours,

ISABEL GREELEY.

Edith Thomas to Playfair.

DEAR SIR LYON PLAYFAIR,—Sir Lyon Playfair sent Edith ring in box. Edith thank Sir Lyon Playfair for ring. Sir Lyon Playfair come to see Edith.

Good-bye,

EDITH.

During his first visit, the child had examined him closely, feeling his hands, wrist, arm, and face, the sense of touch being, as is so often the case, abnormally developed in the absence of other means of observation. In the following year, Playfair, during his visit to Boston, went to the Institute once more in order to see Edith Thomas. The child remained in the afflicted condition in which he had first found her. When Playfair arrived she was merely told that a gentleman wished to see her, her teacher being anxious to know if she would recognise her former friend by touch. At first the girl felt Playfair's hands rather indifferently, but on touching the skin on his wrist under the shirt cuff, her face suddenly lighted up, and, becoming greatly excited, she spelt rapidly on her fingers, "It is the Englishman who gave me the ring;" and then she flung her arms about his neck, seeming delighted to meet again one who had done her a kindness. During the whole of his visit to the Institute, the poor girl clung to him with every demonstration of affection, constantly stroking his face and hands.

AUTOBIOGRAPHY CONTINUED.—XIII.

1888 to 1890.

IN May (9th), 1888, the Great International Exhibition of Glasgow was opened by the Prince and Princess of Wales. They stayed with Lord Hamilton of Dalziel, who had invited a party to meet them. Unfortunately Home Rule politics were too strong to make this house party of the mixed character which it should have been, and which Lord Hamilton of Dalziel desired. Political pressure was put upon the Scotch Secretary, Lord Lothian, the Duke of Buccleuch, and others to decline the invitation to Dalziel. The only Conservatives who resisted this pressure were the Earl and Countess of Strathmore and Mr Cochrane Baillie. The other guests were Lord and Lady Herschell, Lord and Lady Rosebery, the Commander-in-Chief for Scotland, and ourselves. Whether the Prince and Princess and their suite knew of this political difficulty I do not know; at all events they were as usual charming, and made the visit a very agreeable one.

The opening day, Tuesday, the 9th of May, was sunny, unlike the usual Glasgow weather. The Exhibition Buildings were erected on a commanding site near the University. Glasgow distinguished itself by the preparations made, and all the streets were gaily decorated. Of the many public receptions of this character which I have seen, this one was among the most brilliant and successful. The Royal procession, in twelve carriages, passed for several miles through a dense mass of people, the volunteers and military keeping the route clear. After lunching with Lord Provost King, who lived close to the Buildings, the Prince and Princess opened the Exhibition with the usual ceremonies. On the return procession to the railway a droll accident happened to myself. Being anxious to see the chemical exhibits I separated myself from the Royal party and found that it had started on the return route, leaving a carriage for me to follow. When I entered it, the guard of mounted police, about twenty in number, who

were to form the rear of the procession, came behind and at the sides of the carriage. The people in the crowded streets could not understand this, and, seeing a single person in a carriage closely guarded by mounted police, obviously thought I was a State prisoner, and, for the several miles which I had to pass through the crowded streets, gave the poor captive signs of sympathy and applause. It was impossible to keep a grave countenance when I saw all the occupants of the windows anxiously consulting their programmes to find out who this strongly guarded individual could be. Luckily I reached the railway just as the train was starting for Dalziel, and amused the party with an account of my accidental adventure.

On the 15th of June, 1888, the Emperor Frederick died. I received the information from Prince Christian in the following letter.

CUMBERLAND LODGE,

H.R.H. Prince Christian to Playfair. *June 15th*, 1888.

DEAR SIR LYON PLAYFAIR,—We have received to-day the sad news of the Emperor's death, and though we had been prepared for it for a long time, still it is impossible not to feel deeply moved and grieved at such a sad fate. I personally have lost the truest and best friend I had, whom I had known for thirty-seven years. I leave to-morrow for Berlin, and shall, of course, not be able to attend to any business for the present, nor can I tell when I shall be back.

Believe me,

Yours sincerely,

CHRIS. V. HOLSTEIN.

The universal sorrow and sympathy for the Empress and our own Queen exhibited by all classes was very striking. I went the following day to Dollis Hill, the country house of Lord Aberdeen, to a gathering of foreign missionaries who at present are holding a convention in London. At least five hundred missionaries were present, two hundred being from America. Mourning was almost universal, and the feelings of sorrow were touching. Gladstone was

present, but he declined to address the assembly as he feared that he might be misunderstood, especially as a telegram had just reached us of the great Liberal victory at Ayr, and he did not desire that any manifestation should be made by his followers. I wrote an account of the sorrow shown by this assemblage of missionaries to Prince Christian at Berlin, and the Prince of Wales afterwards told me that he took this letter to the widowed Empress, who appreciated the sympathy shown on that occasion.

I had not seen much of the Emperor in late years, but when he was Crown Prince and visited this country, I occasionally dined with him and the Princess. It was impossible not to admire the manly character and simplicity of the Prince. Full of natural intelligence, he never professed knowledge when he did not possess it, and was always anxious to obtain information. His kindliness of disposition endeared him to this nation as well as to Germany. He once said sadly that the political conditions of Europe had undergone such profound changes since he had been educated as a successor to the throne, that he doubted his powers to adapt himself to the new conditions. No one else doubted his ability, or his desire to sustain the peace of Europe, had his health been preserved. In the Jubilee procession of 1887 he was the noblest-looking man in that great array of Kings and Princes. I was within a few feet of him during the celebration at Westminster Abbey. I knew then that the best medical opinion in London was that he suffered from cancer, and that before many months he must pass away. This conviction made the ceremony of rejoicing for the Jubilee one of melancholy to me. A few days afterwards his devoted wife asked me to tell her the prevailing feeling among medical men, but I thought it was best to profess ignorance, especially as I had no professional judgment of my own. I have a memento of the late Emperor which I much value. It consists of two large vases in Berlin porcelain, which were given to me by the Emperor William upon the recommendation of the Crown Prince.

In January, 1889, the widowed Empress came over to

England and visited Sandringham. She expressed a wish that Lord and Lady Granville and my wife and myself should be invited to meet her in memory of old acquaintance when she was Crown Princess of England. The rest of the party consisted of her three daughters and the family of the Prince of Wales.

The whole party were in deep mourning, though the Empress did her best not to cast a gloom over the young party of her nephews and nieces. She discussed with me quite openly and frankly the difficulties and unpopularity which came upon her after the death of the Emperor. I was particularly struck with her defence of Bismarck when I remarked that his behaviour to her did not indicate love for England. She assured me that as a statesman he fully valued the alliance and friendship of England, and always worked to maintain it. The newspapers blamed her for the publication of extracts from the Emperor's diaries, showing that it was the Emperor, and not Prince Bismarck, who had desired the unity of Germany. She told me that she was pained by this publication, and had nothing to do with it. On the death of the Emperor she had found his journal in a carefully sealed packet, with instructions outside that it was to be deposited in the State archives. This she did the day after his death. The premature publication of extracts the Empress attributed to the over-zeal of a friend of the Emperor, possibly Professor Geffcken, employed by him to copy parts of the journal written on the field of battle in pencil notes. His friend had probably kept the original pencil entries, or copies of them, in the hope of some day giving full credit to the Emperor's share in the achievement of national unity. It will be remembered that Prince Bismarck must have thought so also, as he took steps to prevent any further publication of the diary by Professor Geffcken.

In May of 1889 I received a presentation of plate from the Prince of Wales at Marlborough House. The occasion was my resignation of the Honorary Secretaryship of the Royal Commission of the Exhibition of 1851. This Commission administered the landed property bought out of the

profits of that Exhibition, the value of the estate having largely increased since the date of the purchase. The object of this purchase was to find sites for public buildings, and to promote education in science and art. The South Kensington Museum, the Natural History Sections of the British Museum, the Royal Albert Hall, the Imperial Institute, the Royal College of Music and other institutions are built on this property. When General Scott, the Secretary of the Commission, died, I found that a long course of over-building had brought the affairs of the Commissioners to a financial crisis, and I volunteered to act as Honorary Secretary until they were restored to a sounder position. The debts of the Commissioners were then £180,000, and the annual deficit near £2,000. When I resigned, the debt had been reduced to the comparatively small amount of £26,000, and there was a substantial surplus income.

But the age of seventy years had arrived, and I thought it prudent to give up some of my work. The Commissioners in their private capacity subscribed a sufficient sum to buy a service of old silver plate of the time of George II., and this was given to me in a very gratifying way at Marlborough House. The Commissioners attended and the presentation was made in a friendly speech by the Prince of Wales in the presence of the subscribers, among whom were Their Royal Highnesses the Prince of Wales, the Duke of Edinburgh, the Duke of Connaught, Prince Christian; the Duke of Teck and the Marquis of Salisbury (Prime Minister), Mr Gladstone, Earl Carnarvon, Earl Granville, Earl Rosebery, Lord Cranbrook (President of the Council), Mr W. H. Smith (First Lord of the Treasury), Lord Herschell and Lord Selborne (two past Lord Chancellors), Lord Thring, Mr Goschen (Chancellor of the Exchequer), Mr Childers, Mr Mundella, Mr Plunkett, Sir W. Hart-Dyke, Sir Sidney Waterlow, Admiral Sir A. Milne, Sir Dighton Probyn, V.C., Sir G. Bruce (President of the Institution of Civil Engineers), General Sir T. Biddulph (Treasurer to the Queen), Sir F. Leighton (President of the Royal Academy), and General Ellis.

Not a single member of the Commission declined to subscribe, though many of them were my political opponents; indeed, the first subscription sent in was that of Lord Salisbury, the Prime Minister. The secret had been so well kept that I only knew of it by being summoned to attend a meeting at Marlborough House a few days before the presentation. In replying to the Prince of Wales's speech, I alluded to this circumstance:—

> The secret was so well kept from me that it was only within the last few days I knew of the purpose of presenting me with any token of recognition. I receive with pride and pleasure, at the hands of your Royal Highness, this gift from my colleagues on the Commission. Its original purpose of offering sites for public institutions is now nearly completed, but there is a future before it in the improved condition of its finances which will extend its object to the promotion of education in sciences and arts to the provincial towns as well as to London. This development of its original intention will make it a national memorial of the Great Exhibition of 1851, carried out by your illustrious father the Prince Consort under great difficulties. That Exhibition had an enormous influence on the industries of the country, and it has been by the exertions and example of your Royal Highness that this influence has never been allowed to die out.

The purpose indicated in the latter part of the speech has since been accomplished. Scholarships in all the leading colleges throughout the country and the Colonies have been established. Their annual value is £150, and they are tenable for two or three years. As they are only bestowed on graduates, who have shown capacity for research, it is hoped that they may be of use in encouraging promising students to devote their lives to the advancement of science. Huxley, Sir William Thomson, Roscoe, Lockyer, and other men of science, gave me willing aid in framing a scheme for these scholarships.

A proposal to increase by £40,000 the annual vote to the Prince of Wales as a means of providing for his family produced much discussion in the House of Commons at this time, though it was ultimately carried. The division list showed that the Liberals as a party were strongly against it, and Mr Gladstone and I were almost the

only members of the party who voted for the grant. This vote astonished my constituency at South Leeds, and I immediately went down to defend my action. The meeting was crowded, and though I received an attentive hearing, the feeling was at first decidedly against my support of the increased royal grant. I pointed out that every great nation must have a Head to represent its greatness and dignity. It mattered little whether the Head was called a King or a President, provided that both are surrounded by constitutional safeguards against the abuse of their high position.

It is only a question of expediency whether the head of the State should be appointed by hereditary succession or by election. By the former method the head of the State represents the dignity of the whole people; by election he represents only the majority, and naturally favours that at the cost of the minority. The United States forms the best example of an Electoral Head of the State, and its experience has now covered a century. But this system has grave inconveniences. The President is elected for four years, during only two of which he does effective administrative work. The first year is practically wasted in fulfilling the electoral promises made during the contest; and the last of the four years in preparing for the next election.

The relative cost of a King by succession and a President by election is much in favour of the former. In the case of the United Kingdom our monarchs have royal property administered by the Government, and its revenues largely diminish the need of taxation. In fact, the whole taxation of the people for the support of the Queen and Royal Family is less than a penny a head per annum, while the cost of electing a President of the United States is estimated at half a dollar, or two shillings per head, every year.

Politically, the Sovereign of the United Kingdom has much less power than the President of the United States, whose Cabinet is personal, and not within or accountable to Congress. This independence by the Executive of

Parliamentary control takes away much power from the people. In England the Sovereign can never practically act without the consent of Parliament, for the Ministers are responsible to it, whereas in the United States they are responsible to the President.

The splendour which surrounds our throne does not mean that the Guelphs are great in themselves, but that they reflect the greatness of the people. If they were compelled to lessen the glitter of the throne by petty economies, they would lessen the lustre of the empire which represents all that is brilliant as well as all that is good, earnest, and true. It is well for the people that they should pay a sensible sum to represent the dignity and glory of the nation, and I look with apprehension to the rapid improvement of the Crown revenues, which will before long suffice as an endowment for Monarchy, and render it independent of the contribution of the people. It is certainly not much that is asked from the population of the United Kingdom that each person should contribute one penny yearly for the maintenance of the Head of the Empire.

As I continued to speak in this vein, I saw that the feeling of the large meeting was coming round to my views, and at the end of the speech I challenged a vote as to whether I still preserved their confidence. Out of a meeting of about 1,000, three hands were held up against me, and all the others in my favour.

AUTOBIOGRAPHY CONTINUED.—XIV.

1892.

IN 1892 the Government of 1886 came to an end, leaving behind it both good and bad records of legislation. The former consisted in establishing representative Local Government in Great Britain, including a London County Council. It is customary to discount these measures on account of their incompleteness, but it was a considerable feat in legislation to have established them at all. Logically a like measure should have been passed for Ireland, but the

Bill for this purpose was brought in amid the last groans an expiring Government, and was obviously framed f show and not for use. The Tory Government also pass a measure which to a large extent gave free education elementary schools. No doubt the measure was halti and imperfect, but it is surprising that it received tl support of the Conservative party. The late Governme had been kept in power by the Liberal Unionists wl deserted Mr Gladstone in 1886, and the Conservatives ha to pass some Liberal measures to satisfy their allies.

Ireland during these six years has been under a Coercic Act, administered by Mr A. Balfour, the Irish Secretar Mr Balfour is a man of great ability, but he had to win h experience as an administrator. For some years he thoug excessive firmness was requisite to keep down discontent i Ireland, and he imprisoned Irish Members of Parliamer for speeches which would have been perfectly legal i England. This severity might have been tolerated had h not committed the error of treating these political offende against the Coercion Act as common criminals, who shoul be obliged to wear prison dress and subsist on prison diet A reaction followed this rigour, and as the General Electio approached the Coercion Act was disused. At last, i June, Parliament was dissolved, and a General Electio followed. I had a short though sharp contest at Soutl Leeds with Mr Neville, who reduced my majority of 1,70 in 1886 to about 1,530 in 1892. The seat was known to b a safe one for me, and perhaps we were over confident, a I spent part of the election in aiding candidates in the surrounding constituencies, including some in Lancashire and Cheshire.

The result of the General Election was that Mr Gladstone had a narrow majority of forty above Conservatives and Liberal Unionists combined. The interest of the country was greater than in previous elections. The 'Daily Graphic' published daily the returns in the form of two ladders placed side by side. On the right-hand ladder Lord Salisbury started high up with his large majority, while Gladstone was at the bottom. Day by day the

Grand Old Man was seen slowly creeping up to his rival, and ultimately passing him. At the final poll Gladstone was shown at the top rung sitting down, and mopping his brow, obviously perplexed as to what he should do next. This graphic representation of the Election was a great success, and established the 'Daily Graphic' as a paper. In the clubs, during the Election, members sat up all through the night to see the records of the elections posted up on large screens as the telegraphic records arrived from the provinces.

Lord Salisbury met the new Parliament, and was defeated by the majority of forty. Mr Gladstone had to form a new Government, and met with some difficulties. His former colleagues were advancing in age, and the younger politicians were afraid that they would not be included in the Government if the old politicians came back. There was therefore a dead set in the newspapers against the veteran politicians. Of his late colleagues, I was, though ten years younger, still the next oldest to Gladstone himself, and then Stansfeld came next to me. It was obvious that the chief set of the younger Radicals was against us on account of our age, and there was much that was reasonable in this feeling. Accordingly I did not make the least effort to be included in the new Government, and, in fact, felt relieved that I should not be called upon to undergo the fatigues of a Cabinet Minister in the House of Commons. I therefore watched the formation of the Government with equanimity. I was surprised one morning to receive a letter from Mr Gladstone, which I presumed was to ask me to join the Government. Its object, however, was of a different character. The letter was as follows :—

Mr Gladstone to Playfair.

1, CARLTON GARDENS,
August 13th, 1892.

MY DEAR PLAYFAIR,—I recognise, and am confident the nation would recognise, your fitness to receive an offer of Cabinet office on the present occasion, were it not for the operation of an inexorable law, by which I ought to be the first person proscribed. But as I am not permitted to

profit by what at my age would be simply a favour, I ha only the painful duty of recognising that a public opini not upon the whole unreasonable, deems us, the memb of the last Liberal Government, too old to resume c charges as a body. I fear, therefore, it is not within t scope of my present commission to make any propo which would give us the benefit of direct assistance fr your high character and your great knowledge, experien and ability. There is, however, a mode in which a mark acknowledgment might be given to your services, and if is agreeable to you I should have sincere pleasure in su mitting your name to Her Majesty for a Peerage.

Believe me, with much regard,

Sincerely yours,

W. E. GLADSTONE.

Playfair to Mr Gladstone. *August 13th, 1892.*

DEAR MR GLADSTONE,—I fully recognise the diff culties of age in my own case, though not in yours, and determined not to make the least effort to obtain offic Had you resolved, without any mark of favour, to fill u the Ministry without me, I would have written to assu you of my loyal support as a member of your party. Th offer which you make I fully recognise as a high expressio of your esteem, which I am proud to possess. Allow m twenty-four hours to consider it. It is not impossible, a my three children happen to possess independent mean and are richer than their father. But I hope you will no consider it unreasonable if I ask till to-morrow before give a definite reply. In the meantime, with sentiments c profound appreciation for your friendly communication,

Believe me,

Sincerely yours,

LYON PLAYFAIR.

Same to the same. *August 14th, 1892.*

DEAR MR GLADSTONE,—Having considered your kin proposal to submit my name to Her Majesty for a peerage

I place myself at Her Majesty's commands should Her Majesty be graciously pleased to confirm your kind recommendation.

Yours, etc.,

LYON PLAYFAIR.

Playfair to Sir Henry Ponsonby. LONDON, *August 23rd.*

I do not know whether it is proper for me to express through you to Her Majesty my feeling of profound gratitude for the dignity which Her Majesty has been pleased to confer upon me. But I do not like to sail for America without showing my great appreciation of this high mark of Her Majesty's favour, and I leave it to you to express my sentiments of devotion and gratitude if you think it right to do so.

In thanking Mr Gladstone for this mark of his favourable regard, I asked for a short delay in order to consult my family. Personally I am too poor to accept a peerage, but my three children have independent means. My son is in the Mauritius, as an artillery officer, with his wife and my only grandson, Lyon. Unfortunately I could not consult the person most interested in the hereditary succession to the peerage, but as the rest of my family urged me to accept the offer I did so. The Queen, I understand, was pleased with Mr Gladstone's request to make me a peer, and consented to it in terms of gracious kindness. In acknowledging my letter of thanks General Sir Henry Ponsonby, Her Majesty's Secretary, wrote to me as follows :—

Sir Henry Ponsonby to Playfair. OSBORNE, *August 28th*, 1892.

DEAR SIR LYON PLAYFAIR,—When I showed the Queen your letter of thanks, she said it gave her great pleasure to confer a peerage on one of her old friends.

Yours very truly,

HENRY PONSONBY.

The title which I selected was "Baron Playfair of St. Andrews." In that ancient city my ancestors had lived for

several generations, and my father, mother, and uncles, as well as my grandparents, are buried in the old churchyard of the ruined cathedral. The authorities of the City and University expressed their satisfaction that I had associated St. Andrews with my barony.

The newspapers of both parties were favourable to my elevation to the peerage, but there was one circumstance which gave me so much pain that it was a long time before I derived any pleasure from the peerage. I allude to the fact that I had to separate myself from the constituency of South Leeds. This is essentially a working man's constituency. The electors largely consist of skilled mechanics and coal miners. They have always shown the warmest friendship for me, and I have reciprocated that friendship. I believe that it was nearly as much pain to them as to myself that our official connection was severed. As it is a thoroughly Radical constituency I feared that they would think I had treated them with scant courtesy. But at the first meeting to consider the vacancy caused by the peerage, they unanimously passed the following resolution :—

> Having heard the letter of the Right Hon. Sir Lyon Playfair, this meeting reciprocates the feeling of pain and, in some measure, the pride and satisfaction at the recognition by Her Majesty the Queen of the services of the right hon. gentleman by his elevation to the peerage of the United Kingdom, and expresses the hope that his life may be long spared to add to a life made noble by a record of untiring efforts in promoting the social and intellectual advancement of the people ; and also records its thanks for the able and disinterested manner in which he has represented this constituency for the past seven years.

I hope that the new member for South Leeds will appreciate the merits of the constituency as much as I have done.

I may as well mention here that on the 23rd of February, 1894, the South Leeds constituency invited Lady Playfair and myself to an entertainment at Leeds, and presented her with a silver blotting case and envelope case, and myself with a beautiful illuminated address, congratulating me on the peerage and expressing their warm friendship.

It is unnecessary to dwell upon Playfair's political position during the years covered by the last fragmentary instalments of his Reminiscences. It remained very much what it had been during the whole of his Parliamentary career. He was active in support of the Liberal cause during the years which preceded Mr Gladstone's return to office in 1892; and not only at Leeds, but in many other great centres of industry and population, he addressed meetings on those economic and political questions in which he took so deep an interest. His exclusion from the Cabinet of 1892—an exclusion due entirely, as Mr Gladstone stated, to his age—did not prevent his being engaged in serious political work, first as a supporter and subsequently as a member of the Ministry. The event which he felt most was, as he has stated, the severance of his connection with the South Leeds constituency. The peerage which Mr Gladstone offered to him, and which he accepted, was no compensation to him for the loss of his position as representative of a body of men whom he had learnt not only to respect, but to love. Yet the weight of years which prevented his taking a leading part in the deliberations of the new Ministry made it desirable that he should be relieved from the wear and tear of life in the House of Commons. He left that House with deep regret, and it may be said with confidence that he left behind him not a single man who was other than his friend. To his son, who was at that time stationed at the Mauritius, where he passed through the terrible experience of the great hurricane of 1892, he addressed the following letters:—

Playfair to his Son. ONSLOW GARDENS, *May 23rd*, 1892.

We have received your telegram to Mr Hickman telling us that you are safe, and we were intensely relieved. Your kind letter arrived on my birthday, and your

telegram also, only a few hours later than the news of the disaster. We suppose that Jerningham was Acting-Governor when the disaster occurred, and his activity seems to have been admirable. I suppose that all of you had to work hard to help the poor people, who had suffered severely. We trust that little Lyon was not made worse by the fright. In our moderate climate it is difficult to realise your position in being kept perhaps twenty-four hours shut up in the house, and unable to help even your nearest neighbours. I hope that your men did not suffer, but it must have been an anxious time for you at a considerable distance from the troops.

I send you to-day a speech which I delivered at Leeds. I had for the first time some difficulty, because I voted against the eight hours' labour day by Act of Parliament. However, only from ten to twenty of a very crowded meeting voted against me, and even they came up to me afterwards, and said it was only a demonstration, and that they would vote for me at the election. We expect the dissolution about the 25th June or thereabouts. What the result will be no one can tell; probably the Gladstonians will get in by a small majority. At present I have no opponent.

Same to the same. ONSLOW GARDENS, *July 25th*, 1892.

My election was pretty hard work, as so many candidates wanted my help. I spoke for seven candidates in Yorkshire and Cheshire, besides my own work. Sometimes I made three speeches daily—always two. My opponent, Neville, was a nice young fellow. He fought hard, and I could not neglect the fight, though I had a majority of 1,535. I got the support of sixty per cent. of the voters, and he of forty per cent. Edith came to Leeds, driving about in a landau, the horses and coachman gaily decorated in yellow, and Edith's dress brilliant with the same colour of the party. She was in the gallery of the Town Hall during the counting of the votes, and when the result was thrown upon a screen by a magic lantern,

Playfair	4,829
Neville	3,294
Majority	1,535

Edith accompanied me to the front of the platform to receive the cheers of thirty or forty thousand people, who, of course, did not hear one word of my speech of thanks. As I was going into the hall a clergyman, obviously belonging to the High Church, put his hands to his mouth and groaned at me. Unfortunately for him, my chairman, Alderman Gilston, was behind me, and he went up to the clergyman and said, "I do not know who you are, but I will find out. My name is Alderman Gilston, and I tell you you are a disgrace to your cloth and your profession." The poor cleric slunk into the crowd as far as possible. Another election story may interest you. I had been speaking in the Colne Valley division for the Liberal candidate, Sir James Kitson (now M.P.), and in coming back by the train I went into a smoking carriage where a gentleman was having a cigar. The following colloquy took place:—

Stranger: Are you from Leeds?

L. P.: I am going there.

Stranger: Do you belong to Leeds?

L. P.: I am a candidate for a seat there.

Stranger: You are Lawrence Gane. I know all about you.

L. P.: No, I am Lyon Playfair.

Stranger: You do not know how interested I am to meet you. You and the poet Burns have made me what I am. I owe everything to you. Sir, my father was the drunkard of the village, and I was brought up as the street Arab. When my father died he called me to his bedside and implored me to keep off drink, which had ruined him and his family. I went to school and learned to read, and I got hold of a copy of Burns, who opened my mind. Then I happened to see in a newspaper a speech by you on technical education and the dignity of labour. This made me join a Mechanics' Institute at M——, and now I am its President. Every scrap that I see of a speech by you I read with eagerness, and you have formed my life, next to Burns.

L. P.: That is very gratifying to me. Seed sown broadcast comes up after many days in places least expected.

This stranger had so far profited by Playfair's advice that he was himself one of the candidates for Parliament in the General Election of 1892.

ONSLOW GARDENS.

Playfair to his Brother. *February 10th*, 1893.

MY DEAR LAMBERT,—We are all eager to hear about the Irish Bill on Monday. There never has been such a rush for places as on this occasion, probably the greatest effort, and perhaps the final one, of the G. O. M. I met him two days ago at dinner at Marlborough House, and we left together. The night was bleak, and my brougham was at the door, so I offered to drive him home. But, no! the brisk youth said a walk stimulated circulation, and he went off jauntily, while his juniors put up their collars and jumped into carriages with closed windows. Yet you Tories have nothing but abuse for this wonderful specimen of humanity.

During the autumn Playfair was surprised to receive a communication from Mr Gladstone, inviting him to accept the post of Lord-in-Waiting to the Queen.

Private.

HAWARDEN CASTLE, CHESTER.

Mr Gladstone to Playfair. *October 20th*, 1892.

MY DEAR PLAYFAIR,—It would, I think, gratify the Queen if I could persuade you to let me propose your name to her as a Lord-in-Waiting. You are, I dare say, aware that you would find on the list of colleagues one very distinguished name, that of Lord Acton, and it would, I think, be in your option to take charge of Scotch business in the House of Lords, which may be much more than formal.

You are aware, I dare say, that we were obliged to cut off the political appointments in the Lords almost wholly outside the Cabinet, and that the Lordship-in-Waiting, unlike most of the Household appointments, facilitates the maintenance of personal relations with the Queen.

I do not know if you are aware that the French Protectionists promised an increase of £8,000,000 from the new tariffs, and that the result is likely to be a deficit!

With our kind regards to Lady Playfair,

I remain,

Sincerely yours,

W. E. GLADSTONE.

Playfair's work as Lord-in-Waiting to the Queen, though valued by him as keeping up his connection with the Royal Family, a connection which had extended over the greater part of his life, was made specially congenial because it placed him in intimate relations with more than one department of the Government of which he had to act as the representative in the House of Lords. From his letters to his wife during his "waits" at Windsor a few extracts may be made.

Playfair to his Wife.

WINDSOR CASTLE,
Sunday, June 25th, 1893.

I had better write, as there is some doubt as to whether I go to London to-morrow to the levée. The Queen holds a Privy Council to-morrow, and wishes me to be present as one of her Privy Councillors, so Ponsonby is telegraphing to see if they can get a Lord-in-Waiting to supply my place at the levée.

Last night arrived the Duchess of Edinburgh, Princess Victoria, and Princess Alexandra; and also Lord Wolseley and Admiral Hoskyns. I dined with the Queen, and send you the plan of the dinner, which had more of State than usual. You will see that the Duchess of Edinburgh was on the right of the Queen, then I came between the Duchess and her very agreeable daughter, Princess Victoria. They were both very affable, the Queen frequently joining in our conversation. After dinner there was "a reception" of the ladies of the Household.

To-day the Queen kindly sent to say that she was to attend a service in the Mausoleum of the Prince Consort, and she thought I might like to join it. Accordingly I

walked through the grounds to Frogmore, I should think about a mile. The walk through the Home Park is lovely. This Mausoleum to me was very touching. Over the altar is a large picture of Christ coming out of the tomb, and the Roman soldiers falling down under their shields, overcome by this triumph over death. On each side of the Mausoleum are two large pictures, one of the Crucifixion and the other of the Disciples' Visit to the Empty Tomb. In the middle is the sarcophagus of the Prince Consort, with bronze angels supporting it, and the recumbent figure of the Prince in white marble. In a recess is an exquisite monument in pure white marble to Princess Alice. You recollect that she died of diphtheria, after nursing her child through its illness, and the child lies beside her, clasped to her breast. I had just time to go round the Mausoleum when the Queen arrived. There were three rows of chairs. In the first row sat the Queen, the Duchess of Edinburgh, Princess Beatrice, and Princess Leiningen. In the second row Lady Antrim and the three Edinburgh Princesses, one a little girl. In the third row two Ladies-in-Waiting, Miss Macneill and Miss Cadogan, Sir John Macneill, Sir F. Edwards and myself. The music was hidden, but the choir was good. The Dean of Windsor and a Bishop, unknown to me (though he came up and talked with me), officiated.

The whole service was pleasing, and I felt touched, as it was the first time I had seen the Prince Consort's tomb. I walked back in a roundabout way with Edwards and Macneill, and saw all the beauties of Frogmore. The Queen goes there every morning and does her work upon the Government despatches in a pleasant tea house, attended by her secretaries. After the service at the Mausoleum she went to the tea house to get through her morning work, which follows her on Sundays as on other days.

Same to the same. WINDSOR CASTLE, *December 11th*, 1893.

To-day we have had a most eloquent sermon from the Bishop of Ripon (Dr Boyd Carpenter), and I did not go out at all, as the weather was so inclement.

Yesterday I had a pleasant walk with Bishop Barry, and he took me over the ecclesiastical precincts of St. George's Chapel. In the garden there is a blighted willow tree. It was planted from a cutting of the willow tree which I saw growing over Napoleon's tomb at St. Helena. It grew and waxed to be a goodly tree, growing on the ashes where the last martyrdom by fire took place at Windsor. On the day of the battle of Sedan, when the power of Napoleon III. fell, there was a heavy storm at Windsor, and a stroke of lightning knocked the chief branch from the willow tree. Still it stood, and was stunted, not blighted. Years after there was another heavy storm, and lightning again struck the tree and carried off the second great arm. It was afterwards ascertained that this accident happened just at the hour in which the Prince Imperial was killed in Africa by the Zulus! There is a wonderful Napoleonic story for you!

Same to the same. WINDSOR CASTLE, *July 16th*, 1894.

Yesterday I went to the private chapel in the morning (12 o'clock) and to St. George's Chapel in the afternoon (5 o'clock). The singing there is beautiful, and the whole surroundings make the service most attractive.

At nine I dined with the Queen. Princess Alix was on one side of me and the Dean's wife, Mrs Elliot, on the other. Occasionally the Cesarevitch joined in our conversation, and then it became general at the top of the table—the Queen, Princess Beatrice and Bishop of Ripon joining. The bishop is a capital *raconteur*, and is a good guest at a Royal table. I liked Princess Alix and found her very agreeable when we did talk together. After dinner I had a long talk with the Cesarevitch, and found him singularly well read. It required all my knowledge of geography to keep up with him in his talk about the Kurile Islands, which stretch from Yezo to Kamschatka.

During the whole term of the existence of the Government of 1892, first under the premiership of Mr Gladstone, and subsequently under that of Lord Rosebery, Playfair's

services were in constant requisition. Whenever any one of those questions with which he had been associated during his life was on the *tapis*, Ministers applied to him for advice and assistance. How varied and how onerous were the demands thus made upon his time and attention may be gathered from the fact that during the Session of 1894, he received in succession the following offers of posts of a more or less laborious character :—The Chairmanship of the Royal Commission on Secondary Education ; the post of Representative of Great Britain at the International Colonial Conference at Ottawa ; and the Chairmanship of a Commission to inquire into the education given in our Naval Schools. He was at the time engaged in the heavy work of the Aged Poor Commission, and was compelled in consequence to decline the appointments thus offered to him.

Playfair to his Son. ONSLOW GARDENS, *April 11th*, 1894.

You may be interested to know that the Government, having been asked to send an Imperial representative to a conference to be held in June and July at Ottawa, in the interests of Canada and Australia, have asked me to attend on the part of this country. Had it been in autumn I would have accepted, but liberties with my health, at my age, are not permissible, and I was afraid of the effects of a month of the Canadian summer. So I have refused.

Before he left for his usual visit to the United States in the autumn of this year, Playfair took some steps to secure a place of burial for himself and his family at St. Andrews. The old burial ground attached to the ruined cathedral had been closed. It was here that Playfair's ancestors of several generations were buried, and he would have been glad to think that when his own time came, he would be laid to rest beside them. But this ancient burial ground had been closed for sanitary reasons, and he was much too earnest in his regard for the public

health to desire that it should be re-opened merely to gratify his own natural wishes. Happily, the new ground adjoined the old.

His work on the Aged Poor Commission became more absorbing than ever towards the close of 1894. The history of that Commission is already well known. Its purpose was to devise if possible some means by which the dream of Old Age Pensions for all who stood in need of them could be realised. The Prince of Wales occupied a seat on the Commission, and attended its meetings with great regularity. It was a powerful body, containing the representatives of different schools of thought. Its President was Lord Aberdare, between whom and Playfair a warm feeling of friendship and mutual confidence had been maintained for many years. Mr Chamberlain and the late Dr Hunter, one of the members for Aberdeen, were also members of the Commission. It gathered a vast amount of useful information with regard to the condition of the aged poor, and to the proposals of different kinds which had been made for the provision of some system of Old Age Pensions. But when the time came for the consideration of the Report, serious differences of opinion were found to exist among the members, and it became apparent to Lord Aberdare, who was then in failing health, that he was being thwarted by some of the younger men, who looked upon the whole question from a political rather than an economic point of view. Lord Aberdare was in constant communication with Playfair during the anxious months when the Commissioners were engaged in a fierce struggle over the terms of their Report; and when increasing illness compelled him to retire from his duties as Chairman, it was Playfair who took his place, and carried on the work to its conclusion.

DUFFRYN, MOUNTAIN ASH,

Lord Aberdare to Playfair. SOUTH WALES, *October 31st*, 1894.

MY DEAR PLAYFAIR,—I am very sorry to hear of your anxiety for Mr Russell, and your inevitable detention at Boston. Brown will have told you of my correspondence with Chamberlain, and of the lines I have taken. . . . I am certainly better—physically as well as any reasonable octogenarian could desire—but I find my head incapable of continuous close attention for even a short hour, and therefore avoid all my usual public work—college, university, etc.—and am rapidly arriving at the conclusion that at this present rate of progress, I have no chance of being able effectually now, without injury probably permanent, to perform the duties of the chair. For these I, and I believe the Commissioners generally, look to you, and I hope that no official duties will stand between you and them. . . .

Ever sincerely yours,

ABERDARE.

Same to the same. *December 6th*, 1894.

MY DEAR PLAYFAIR,—Your letter has greatly relieved me, for I came to the conclusion that my presence on the 11th would be rather embarrassing than helpful, and anything but agreeable to myself. I shall depend upon you for making the necessary explanations. I know by certain tests I have applied that I cannot give that amount of close, continuous attention to the discussions on the Report which are expected from the Chairman. If it were merely a question of peril to my health, I might venture, but I am convinced that after the lapse of a year I should prove myself unequal to the task. Nor have I any ground for supposing that I should be substantially fitter in February next. . . . As for the chairmanship, I am convinced that you are not only the best man, but the only one. I earnestly hope that you may succeed in persuading the majority to meet on the 15th January for the purpose of finishing the Report.

I anticipate some difficulty and many objections, but I hope that you will persist, and if necessary divide.

Ever sincerely yours,

ABERDARE.

Lord Aberdare did not long survive the writing of the above letter. He died on February 26th, just one day before the Report of the Royal Commission was submitted for signature. But for some months his work had been discharged by Playfair, upon whom had rested the burden of revising the Report. A very heavy burden it was. The diverse elements of which the Commission was composed were not to be reconciled even by the most adroit and conciliatory of presidents. Playfair did his best, and strove to induce Mr Chamberlain to fall into line with his colleagues, and to agree to a Report upon which practical action might have been taken; but he failed to do so. The majority Report, for which Playfair was mainly responsible, refused to recommend Mr Chamberlain's scheme for voluntary assisted insurance. It reported strongly in favour of an extension of outdoor relief, and the improvement of workhouse accommodation. It declined to recommend any of the schemes which had been submitted to it for giving State assistance to the aged poor. A memorandum, drawn up by Playfair himself, appeared at the end of the Report of the Royal Commission. It was a succinct summary of the history of that body. "The Commission began their work in February, 1893, under the presidency of Lord Aberdare, who was in the chair during the examination of nearly all the witnesses. He drafted the Report, and presided at the meetings at which it was discussed until the adjournment at the end of July, 1894. The Commission re-assembled on the 11th December, 1894, but the state of Lord Aberdare's health prevented him from being

present at that or subsequent meetings, although he continued to take a deep interest in the progress of their work to within a few days of his death. At the meeting on the 11th December, 1894, I was unanimously elected to act as chairman during Lord Aberdare's inability to attend. Some of the Commission, present and absent, desired that further proceedings should be deferred until the opening of Parliament, while others were in favour of an earlier resumption of the deliberations, which had already been greatly protracted. By way of compromise, it was agreed, with the practical unanimity of those present, that meetings should be resumed on the 29th January, 1895."

The actual summary in which the conclusions of the Report were embodied, was written by Playfair, and submitted to Lord Aberdare, who saw and approved it a few days before his death. Mr Chamberlain and some other members of the Commission signed an independent report, describing the recommendations of the chief report as "inadequate." The solution of the problem of our aged poor was not reached during Playfair's lifetime—has not, indeed, been arrived at to the present hour; but the work of the Royal Commission which reported in 1895 will always remain on record, because of the thoroughness with which it investigated the great question with which it had to deal, and of the frankness and courage with which Lord Aberdare and Lord Playfair vindicated those doctrines of political economy upon which the wealth of nations depends. This Royal Commission was, of course, only one of many in which Playfair took part during his public career. If it achieved no practical result, it was not on that account a less laborious piece of work in the service of his country.

On the Queen's birthday, in 1895, Playfair was the recipient of an honour which came to him most unexpectedly,

and which he valued all the more highly because it was the spontaneous and unsolicited recognition not only of his life-long services to the country, but of the work which he had been doing in the public service since his accession to the Peerage. The announcement that he was to receive the honour of the Grand Cross of the Bath was conveyed to him in the following letter from the Prime Minister :—

10, DOWNING STREET, WHITEHALL,

The Earl of Rosebery to Playfair. *May 12th*, 1895.

MY DEAR PLAYFAIR,—I propose on the occasion of the Queen's birthday to recommend you for the honour of the G.C.B. I have no time to explain why I do this, because the record of your single-minded services to the public is too long for a letter. I will only say that you have never been deaf to the call of duty, however arduous, or fallen short of its requirements. That is a great thing to say, and of few can it be said. I must add, however, the expression of my personal gratitude for the valuable work that you are doing for the present Government in the House of Lords.

Believe me,

Yours very sincerely,

ROSEBERY.

No recognition of his work could possibly have been more gratifying to Playfair than this cordial acknowledgment, by a statesman for whom he entertained a warm admiration, of the value of his services to his country.

The Liberal Ministry resigned on its defeat in the House of Commons in the following June, and Playfair of course ceased to hold the office of Lord-in-Waiting.

Before leaving for his annual visit to the United States, Playfair went to Osborne to be invested with the insignia of his new honour. It had been discovered by the Heralds'

College that a curious mistake had been made with regard to his previous promotion to the Knight Commandership of the Bath, which the following letter explains :—

Playfair to his Daughter (the Hon. Mrs R. M. Stewart).

ONSLOW GARDENS, *August 6th*, 1895.

Many thanks for your letter of affectionate farewell. I hope that you and Stewart will have a very pleasant autumn, and that all will go well with you in our absence. My visit to Osborne on Friday was very pleasant. You will have seen that I was knighted, as it appears that I was never legally "Sir Lyon." When made K.C.B. in 1885, the Queen thought I would like to wear the decoration on her birthday a few days after being gazetted, and so under the sign-manual had given me a dispensation from knighthood "until such time as Her Majesty can conveniently confer it." This I had not observed, and so I was never knighted. This was discovered by the Heralds' College, and accordingly I had to get the accolade as well as the G.C.B. The official termination of my position as Lord-in-Waiting has ended very graciously. The Queen sent to me an engraved portrait of herself, and desired me to send for her album a cabinet portrait of myself. . . . With much love to you both,

Yours lovingly,

PLAYFAIR.

In the autumn of 1895, when paying his usual visit to Boston, Playfair took the opportunity of making, with his wife, a short tour in Canada. His reception in the Dominion was more cordial than ever.

Playfair to his Son.

135, BEACON STREET, BOSTON,
October 18th, 1895.

We have come back from Canada, where our trip was very successful. The hospitality of the Canadians is unbounded, and we might have lunched and dined three

times at least daily. A beautiful banquet was given to me by the bankers, or rather by the president of one bank, to enable me to meet the other bankers of Montreal. At Quebec, which Edith had never seen, the same hospitality was shown us—rather more of it, because the British Ambassador to the United States, Sir Julian Pauncefote, came there after us, and we joined forces, and did everything together. The artillery gave His Excellency a parade in the Citadel, and we dined at the mess in the evening. Since I was there last a splendid hotel has been built on the platform, with a glorious view. Our sitting-room was in the turret, and had thirteen windows, so we commanded every side. The owners of Montmorency Falls asked us to an afternoon party, and the glorious Falls, twice the height of Niagara, though much less in volume, were under our windows. The President of the Union Pacific sent his car to the Ambassador, so we returned in delightful comfort, with an excellent cook and good wines. In ten days we leave Boston, and on the 30th sail in the *Majestic*.

During his visit to Canada, in a conversation with a newspaper reporter at Montreal in October, 1895, he delivered himself of some of those sentiments with regard to imperial affairs, and the union of Great Britain and her colonies, which he had always held. Referring to the complications which existed at that time in Eastern Europe, and the menacing position of Russia, he said to his interlocutor :—

"I do not think European peace will be disturbed at present through these complications; but, at any rate, as far as England is concerned you may have noticed that in some way, whatever the difficulty, England has come out all right in the end." His lordship will not allow that the Liberal party is disheartened. "We are as resolute as ever, though we do not see the possibility of getting back to power for another five or six years. The majority against us s overwhelming, but this is not because the people are against Liberal principles, but because we went to the country with too many questions. We should have had one or two well-defined measures, which we should have offered to the people, who,

on the contrary, were mystified by a long and indefinite programme. We had Local Option, Disestablishment, Home Rule, Registration, and other matters, which bred confusion and uncertainty in the mind. We needed definiteness, and, not having it, we lost." . . . To the suggestion that the Liberal party has been accused of lukewarmness towards the Colonies, whereas it was the policy of the Conservatives to bind them closer to the Mother country, his lordship said that it was to be remembered that Lord Rosebery was the chairman of the Imperial Federation League, whose object was to unite the whole Empire in closer bonds. "I myself was an active member of the Society, which unfortunately has been disbanded, but I can assure you that there is a strong feeling in favour of Imperial Federation, and that the Society did good work in fostering it. We do indeed desire closer relations, though we would never consent to bring them about by taxation (as was proposed at Ottawa at your recent conference) of foreign produce, which is so much greater than all our trade with the Colonies at present. That would be disastrous for us, and no Government would think of entertaining such a question. The Colonies will grow, and our trade with them will increase, but England will never go back to Protection principles, even for the purpose of making a bond between the scattered members of her family."

CHAPTER XV.

PLAYFAIR AND THE UNITED STATES.

Playfair's Sojourns at Nahant—Almost a Citizen of the United States—Letters to Lady Playfair's Family—The Venezuelan Crisis—Negotiating Peace—Correspondence with Mr Chamberlain and Mr Bayard—Playfair's Share in the Settlement of the Dispute.

IT seems desirable to say something about what may be fittingly called the American side of Playfair's life, and those visits to the United States which occurred so regularly during the last twenty years of his life. His letters to his American friends and relatives sufficiently prove the affectionate intimacy of his intercourse with them; but they do not convey any idea to the reader of the importance which these annual visits to the United States assumed in Playfair's life. The reader has probably noticed that after his marriage with Miss Russell he invariably left England at the earliest possible moment after his release from the labours of the Parliamentary Session, and spent some months of the recess either in Boston or at Nahant, the beautiful watering-place which is so well known to all visitors to New England. His father-in-law, Mr Russell, had a summer residence at Nahant, and here Playfair spent many weeks almost every year from 1879 onwards. The climate and the scenery of Nahant were both to his taste. From the heights of the little peninsula on which the village stood, the visitor looks across the Atlantic upon an expanse of water that stretches from his feet to the shores of Spain. Beautiful walks and

drives are to be found at every turn; whilst Nahant has happily remained free from the features of the fashionable watering-place, and from the dissipations of summer resorts better known to the outer world. It was not, however, merely the beauty and quietude of Nahant that constituted its charm in the eyes of Playfair. The society of the place, although limited, was of no ordinary kind. In the old days it was the summer residence of Prescott, the historian; of Longfellow, Motley and Agassiz; and these men naturally drew to it many friends of distinction from all parts of the United States as well as from Europe. When Playfair became a yearly resident in his father-in-law's cottage, some of the eminent men I have named had passed away; but others, not less eminent, remained. Among these were Longfellow and Wendell Holmes, and with them Playfair's friendship became intimate. It was at Nahant that Longfellow had written some of his finest poetry, and it was the scenery of the watering-place that had inspired not a few of his seaside poems. It was a delight to Playfair to be able to enjoy frequent intercourse with the venerable and illustrious poet. Agassiz he did not know, as death had removed him from the scene; but the widow of the great naturalist survived, and with her also Playfair was on terms of intimate friendship.

It was characteristic of him that just as he had entered into the life of his wife's family as fully and frankly as if he had been one of them by birth, so, during his sojourn in America, he became almost a citizen of the United States, taking the keenest interest in all public affairs affecting the Republic, and discussing American politics with as much interest and intelligence as he brought to bear upon the politics of his own land. He was, of course, specially interested in the public schools

and charitable institutions of the United States, and he never paid his annual visit to Boston without going to see some school or public charity or prison. It often happened that one who was received with honour as a distinguished public man from the Old Country was called upon to take some public part in his visits to these institutions, and it is probable that he never went to America without having to make a number of speeches to audiences varying from school-children to Ministers and statesmen. One notable incident during these American visits has already been dealt with. That was the occasion when Playfair took part in a remarkable meeting that was held at Boston for the purpose of receiving a deputation from Great Britain, who had crossed the Atlantic in order to appeal to the President and people of the United States in favour of a Treaty of Arbitration. At this meeting Playfair was introduced to the audience as one who had more reasons than some to love Boston, for his wife was a Bostonian, and the daughter of an honoured citizen who was present on the platform. He spoke with his accustomed plainness and clearness upon the subject that the meeting had been called to consider, concluding his speech with these words :—

"Let us look at the peculiarities of John Bull and Brother Jonathan, and see if there is anything to prevent the proposed treaty. John Bull is a man full of honest purpose, but he was born on an island and is steeped in insular prejudices. He has a sincere conviction that he is always right and that everybody else is always wrong. Brother Jonathan has the greatest intolerance of discussion, and there is underneath this intolerance a spirit of sweet reasonableness. Now, why should not this honest purpose of John Bull and this sweet reasonableness of Brother Jonathan work in harmony, and form a union which would exercise a power for good which would be felt throughout the length and breadth of the world?"

This homely appeal was made long before Lord Salisbury attempted to frame in concert with the American

Government a Treaty of Arbitration, and it represents one of the strongest sentiments in Playfair's heart during the last years of his life.

He had long been an advocate of a system of arbitration for the settlement of international disputes. In this year, 1887, as he has told us in his Reminiscences, he took part in the movement which was started by the friends of peace in Great Britain in favour of the establishment of arbitration between England and the United States. He visited Washington as a member of the English deputation, and was there received by the President. His speech to the President (Mr Cleveland) has been given on an earlier page. In replying to it, the President spoke in conciliatory and friendly terms. He gave no hint of that future when the relations of England with the United States became so strained that war between the two countries seemed to be imminent; and Playfair himself, when he addressed President Cleveland, can have had no inkling of the fact that a few years later he was to be engaged in devising, not a general scheme of arbitration, but arbitration upon a particular and specific question, in order to save the world from the calamity of a fratricidal struggle between the two great branches of the English-speaking race. His interest in this question of arbitration never failed, and in 1890, under the title of "A Topic for Christmas," he contributed to the 'North American Review' an essay in which he set forth the whole case in favour of a treaty of arbitration, and appealed to the people of the United States to come forward as the champions of that method of settling the disputes of nations. How strongly he felt upon the subject may be gathered from the closing passage of his contribution to the 'North American Review':—

"While Continental countries in Europe groan under these burdens, it is the privilege and duty of English-speaking people

to preach and to practise the doctrine of peace. Every Sunday morning the prayer arises in England—'Give peace in our time, O Lord.' This prayer is national, but it is followed by another—catholic and unique, applying to all nations, that they may have 'unity, peace, and concord.' A few hours after these prayers have been made in the churches of England, they are repeated in those of the United States, and pass with the rising light till they girdle the whole world. The realisation of these prayers is within the power of the Anglo-Saxon race. They are animated by the spirit of love, liberty, and order, which has already done so much to ameliorate humanity; and in the triumph of their mission will there be the maintenance of peace between nations."

But whilst his visits to the States were thus associated to some extent with public purposes, and whilst they undoubtedly gave Playfair, as a member of the House of Commons, an almost unique position, owing to the extent and thoroughness of the knowledge which he had acquired of American party politics, his chief desire in his yearly visits to Boston and Nahant was to enjoy himself in the midst of a family life which seemed to be peculiarly suited to his own temperament. I have had occasion already to speak of his relations with Mr and Mrs Russell, the father and mother of his wife. I now bring together a few letters which not only illustrate, more fully than any comments of mine could, the character of his friendship with them, but which have an interest of their own.

Playfair to S. H. Russell, Esq.

SOUTH KENSINGTON,
January 3rd, 1887.

You will see that the Government has been in a political crisis, which I am glad to say has not broken it up, as we were not ready to take advantage of it, and did not want another dissolution. Goschen has been the cement to fill the crack, but it will not much longer hold together. Still it *may* last through this Session, but it may not. I am very busy just now helping to start the Imperial Institute, which is to be the offering of love and loyalty to the Queen on the fiftieth anniversary of her reign. All

the Lord-Lieutenants and Mayors meet at St. James's Palace on the 12th. It depends a good deal upon the Prince's speech at that meeting whether it will start well. He is a good speaker, and I am sure will distinguish himself on that occasion. At present we have only £10,000 out of £500,000. Every district wishes its own little testimonial, so it is difficult to get money for a great object. The latest proposal is to make the great Jubilee offering a gold cup for the best Cheddar cheese! That manuscript [his Reminiscences], which I was engaged in writing at Nahant, has now got to the year 1878—a year very dear to me, and one for which I am grateful every day of my life.

Playfair to Mr and Mrs Russell.

WINDSOR HOTEL, NEW YORK,
October 28th, 1890.

(On leaving America after his annual visit.)

MY DEAREST PATER ET MATER,—If a million microbes can inhabit with comfort and liveliness the point of a needle, why is it necessary that the great Atlantic should divide people who wish to live together? Our heart is sad because of this need of our existence, but we have so many things to be grateful for that there should be no room for sadness. Mater's guests have departed, but she will soon forget her cares in love for the absent child and son-in-law, who she knows fully appreciated all her love and tenderness. Pater will have no one to instruct with his wide and great knowledge of history. And so it is all over for a few months, and bright memories remain for us of all your love and goodness to us, and I hope pleasant memories to you of those who have left.

Playfair to Mrs Russell.

SANDRINGHAM, NORFOLK,
November 23rd, 1890.

You will see by the above address where I am, though Edith unfortunately could not accompany me. Our party is not very large—the Danish Minister and Madame de Bille, Lord Herschell, Archdeacon Farrar, Sir Frederick

Leighton (the President of the Royal Academy), Sir F. Abel, and myself. The two young Princes are on their travels, so only the Princesses Victoria and Maud are here. Archdeacon Farrar gave us a most interesting sermon, abounding in illustration. He brought in quotations from Goethe, and Rabelais even, with a good deal of science to show that little things make up a man's life, and that these, being done properly, constitute human happiness.

SOUTH KENSINGTON,

Playfair to S. H. Russell, Esq. *January 26th*, 1891.

I have just finished an article on American finance, which will appear in 'The New Review' for February. It is entitled 'The Demas Invitation to substitute Gold for Silver in the United States.' If you wish to be reminded who Mr Demas was, look up your 'Pilgrim's Progress,' and you will find Christian's last temptation before entering the Golden City was by Demas tempting him to abandon the Gold and join "the Silver Fraternity." It is a capital skit on the bi-metallic views which Bunyan must have known in his time. I have made it the apologue of my article. You are sure to have the 'Review' in your Club, but in any case I will send you a copy.

Same to the same. *July 19th*, 1892.

It is still possible we may sail on the 10th August. I must stay to vote my want of confidence in the present Government in any case, but that should be determined by, say, the 8th. Lord Salisbury sticks to office till Parliament meets, which is not till the 4th. Three days will be required for swearing in and electing a Speaker; and after that, two days, the 8th and 9th, will be required for the vote. It is doubtful whether we can catch the steamer on the 10th, and we prefer to sail by the large steamers, either the *Majestic* or the *Teutonic*. So it may, and probably would, be the 24th before we could sail. The Radicals think me too moderate, and do not wish me in the Government.

SOUTH KENSINGTON.

Playfair to Mr and Mrs Russell. *February 1st*, 1893.

Edith was at the ceremony in the House of Lords yesterday, and for the first time took her seat in the Peeresses' Gallery. The House of Lords was *en grande tenue* for the occasion, the ceremonial entrance for Peers being opened, and servants in scarlet being in attendance. I suppose this was done in honour of the unusual number of Peers introduced. The Lord High Chamberlain, the Earl Marshal (Duke of Norfolk), the Garter King at Arms (Sir A. Woods), and the Black Rod (Admiral Drummond), dressed in their gorgeous costumes, conducted each peer in succession through the queer ancient ceremonial of which we send you a programme. I was seventh in the list, and each presentation took ten minutes. The procession consisted of seven :—

1—Black Rod, in black clothes; 2—The Earl Marshal, Duke of Norfolk; 3—Lord Ancaster, Hereditary Lord High Chamberlain; 4—Garter King at Arms; 5, 6 and 7—Lord Brassey, Lyon, Lord Monkswell, in Baron's robes.

Garter wore a crimson velvet robe, embroidered all over, both before and behind, with golden lions. The Duke of Norfolk's scarlet robes were like a priest's—much embroidered. The Lord High Chamberlain was in the robes of an earl—scarlet, with deeper ermine than the baron's. They filed up in Indian file to the Lord Chancellor, where Garter gave me my Patent: a large roll of parchment, illuminated on the margin with arms, thistles, etc. This is the Warrant for future generations. This patent I, kneeling, handed to the Lord Chancellor, who gave it to the senior clerk, who read it aloud at the table, the peers in the procession standing round. Then I handed the writ of summons to the House, which was also read. Then, after taking the oath of fealty to the Queen, I signed the roll. Again the procession forms, and files down the spiritual side of the House, and the peer, with his supporters, was taken to the upper bench, where Brassey, Monkswell, and I sat down, putting on our cocked hats, and rising

and bowing solemnly three times to the Lord Chancellor. Then the procession was re-formed, and filed out of the House.

Playfair to Mrs Russell.

SOUTH KENSINGTON,
February 26th, 1893.

I am exceedingly busy with work, but it seems to suit me. Two Royal Commissions, one on a university for London, and the other on the Poor Law, occupy me four days in the week. With my companies also these engagements occupy all my days till dinner time. The House of Lords is not exacting, for it occupies generally only one and a half hours. Later, it will give me some work, as I represent three Government departments—the Board of Trade, the Post Office, and Scotland—and have to answer all questions relating to these, and carry through their Bills. At the Commission on the Aged Poor the Prince of Wales attends, and we often have luncheon together.

Playfair to S. H. Russell, Esq.

MYNDE PARK, HEREFORD,
May 22nd, 1893.

I suppose that Edith has told you all about this beautiful place, so I will go back to my visit to Windsor. I arrived at the Castle just in time to get fifteen minutes for my dressing, but with a capital valet I managed to get into the Windsor uniform—dark blue coat with red collar and red cuffs, trousers buttoning close at the ankles, stockings and pumps. My decorations required most time to put on. Then I went into the long State corridor, where the rest of the party, except the Royalties, were assembled. I took the Lord-in-Waiting's place (who dined with the Maids-of-Honour). There were only eight or ten at table. After dinner we again went to the long corridor, where the Queen sent for her guests in rotation. I enjoyed a talk with her about old times, and her impressions at the late ceremonial of opening the Institute. After about half an hour the Queen left with the Princess Beatrice, and I had a long talk with the Princess's husband, after which I joined the ladies of the Household in their drawing-room, and had a pleasant time till 11 o'clock.

SOUTH KENSINGTON,
Playfair to Mrs Russell. *May 13th*, 1895.

MY DEAR MATER,—In your country honours are difficult to understand, and therefore you may be puzzled to know how I became C.B., then K.C.B., and now, on the Queen's birthday, become G.C.B., or Grand Cross of the Bath. Instead of wearing the riband round my neck, it goes across the body; and where the riband used to be, a collar of gold and enamel is substituted on "collar days." Dear Mr Russell, had he been alive, would have been much gratified. . . You will, when you receive this, be in Nahant; and though your return will be full of sadness, I hope the change will do you very much good. You can associate every rose and flower with him whom you loved so well.[1]

In many ways, the most important and interesting feature of Playfair's connection with the United States was the part he played at a time when President Cleveland's actions with regard to Venezuela brought the two countries into a state of dangerous antagonism. When the storm of passion aroused by President Cleveland's message swept over the surface of the United States, no one in this country was filled with deeper anxiety as to the ultimate issue of the dispute which had been raised so gratuitously than Playfair. The warmth of his friendship with many eminent Americans, and his sympathetic interest in the political development of the United States, gave a peculiar poignancy to the grief with which he saw the outburst of a hostile feeling on the part of the Americans towards his native land, the existence of which had hardly been suspected. His view of the action of President Cleveland was that of most Englishmen, but his whole desire was for peace, and, with characteristic courage and enthusiasm, he had no sooner realised the fact that the diplomacy

[1] Mr Russell had died during Playfair's visit to the United States in the previous autumn.

of the two countries had fallen into a state of deadlock than he set about to devise some means by which the difficult knot might be disentangled. Immediately after Mr Cleveland's message he received many communications from his friends in the United States discussing the position of affairs, pointing out its gravity, and imploring him to take some action in the interests of international peace. One eminent American wrote to him as follows, on Christmas Eve, 1895:—

"We are young—England is old, and as the young feel a veneration for those who are older, so we have a feeling of regard for England that is ill-concealed by our often-assumed tone of perfect equality. The term 'mother country' not only means a great deal, but it carries with it an influence which begets filial feeling. And notwithstanding all this, the people of the United States are roused, and in mood for war, because they look upon the action of Great Britain as a menace to our integrity and to our institutions. I have never known the people, North and South, so united and so much in earnest: so ready to suffer any consequences rather than permit unjust aggression against a sister republic. They will await the result of the investigation by the Commission appointed by the President, and if that result unfavourably to the claims of Lord Salisbury, I fear the worst. This is the reason I write. I cannot persuade myself that the English can meditate injustice. It is necessary that our people should be made to see this, that they may touch and feel it, that they may recognise on the part of England a delicacy with regard to the rights of Venezuela which would cause her to recede the moment she sees she is wrong. We hoped to have this come about through arbitration. That hope has deceived us, and the concert of accord with England on the part of the Continental Press makes it doubtful in the minds of many whether any Government in Europe would act with impartiality in the matter. Calmness, justice, and, as

Mr Gladstone says, common-sense, must preside over the decision of this disputed question, and it must be made clear that there is nothing in the whole matter which threatens the integrity of Venezuela; and indirectly (as we understand it) the integrity of the United States."

Partial and inadequate as this expression of the American point of view may be, it deserves to be noted because of the extent to which it prevailed on the other side of the Atlantic. Playfair, who did not forget that the dignity and the integrity of Great Britain had just as good a right to be respected as those of Venezuela or the United States, clearly realised that President Cleveland's action in abstaining from any reply to Lord Salisbury's despatches, and in nominating a Commission to deal with a question in which the sovereign rights of England were concerned, made straight for war. For the moment the appointment of the Commission delayed the catastrophe. But unless some steps were taken to extricate the two great nations involved from the predicament created by Mr Cleveland's undiplomatic diplomacy war, it was morally certain, must ensue.

It was in these circumstances, and stimulated by the appeals he received from American friends, that Playfair, at the request of Mr Chamberlain, took action. On the 12th January, 1896, after a conversation with the Colonial Secretary, he saw the American Ambassador, Mr Bayard, with whom he was on terms of intimate friendship, and handed to him a memorandum which, in his own opinion, might furnish the basis of an equitable agreement between the two countries. The memorandum began by pointing out that the fact that the President of the United States had sent no reply to the last two despatches of Lord Salisbury seemed to offer an opening for private negotiations, by means of which the two Governments might again be brought together. It then proceeded:—

"2. The Monroe doctrine, which essentially is '*that European nations having interests in America shall not seek to extend their influence in that hemisphere*,' and which is not now accepted internationally, might be made international between the countries now having colonies in America. If the United States Government were to propose a conference of these nations to this end, England would accept the Monroe doctrine.

"3. It might or it might not be wise to submit to this conference the question whether the dispute as regards the Venezuela boundary comes within the Monroe doctrine.

"4. *Venezuela.*—In Mr Olney's despatch there was an admission that the United States would not interfere with the friendly arrangement of the boundary between the two nations. Of course Venezuela at present will not do anything without the approval of the United States. Could not some such friendly arrangement or arbitration be made in this way?—

"A. There are no Venezuelan settlements inside the Schomburgk line.

"B. There are no English settlements beyond the Schomburgk line.

"Irrespective of that line, could not the general condition be accepted that all English and all Venezuelan settlements be excluded from arbitration, but that all the country between the settlements be settled by a Court of Arbitration, and a line be drawn by that court which shall be accepted by both countries? It would be possible to add English and Venezuelan Commissioners to the Commission already appointed by the United States, but that would be too large and cumbrous a Commission. Would it not be better to appoint two or three from the United States Commission to represent the knowledge they have acquired, two or three from England, and two or three from Venezuela? If the principle were accepted that the districts already settled by the English and Venezuelan Governments or people should not be arbitrated upon, there would be no difficulty in settling a line on a friendly arbitration. I believe the English Government would accept such a proposal coming from the United States Government."

This important memorandum was undoubtedly founded upon communications which had passed between Playfair and members of Lord Salisbury's Government. It indicates roughly, as the reader will perceive, the settlement which was eventually arrived at; but when he read it to Mr Bayard on that Sunday afternoon in January, 1896, the two countries were still far from being ready to come to terms, and a prolonged correspondence—in the first place

private and confidential, and subsequently official—had to pass between the representatives of both before an agreement was come to. Mr Chamberlain has kindly permitted me to include in this narrative his own letters in the following correspondence. It need only be said by way of introduction that Mr Bayard was as keen to bring about a pacific solution of the difficulty as anyone in this country was, and that, whilst safeguarding the rights and dignities of the United States, he was eager to assist Playfair in the work in which he was now engaged.

Mr Bayard to Playfair.

EMBASSY OF THE UNITED STATES, LONDON,
January 13th, 1896.

DEAR LORD PLAYFAIR,—I return with thanks the memorandum enclosed *in re* Venezuela which you handed me yesterday. I cabled the purport (confidential) to the Secretary of State, and believe the candid and friendly acceptance by this country of the Monroe doctrine, and non-extension of European holdings in the Americas, will be promotive of a better feeling, by dispelling an indefinite apprehension of European intervention and control in Transatlantic local Governments, which has been fostered by a party of foes to the international peace. I sent over also your project of disregarding the Schomburgk line, but reserving actual "settlements" from the scheme of arbitration. While I anticipate good results from non-insistence in advance of the Schomburgk line, yet I do not know how far the actual occupation of the disputable territory has progressed on either side of the dispute. The concession of mining rights has been very reckless and vague and corrupt, as a consequence of leaving the boundary so long an open question; and a great deal of fictitious purchase and sale and unscrupulous manufacture of title has no doubt followed. If we can initiate the disposition to settle in good temper, it will rapidly progress; and I am not willing to doubt that good feeling and good sense will prevail.

Sincerely yours,

T. F. BAYARD.

On January 17th Mr Bayard informed Playfair that his Government was indisposed to assent to a conference being called to deal with the Monroe doctrine.

The Right Hon. Joseph Chamberlain to Playfair.

HIGHBURY MOOR GREEN, BIRMINGHAM,
January 19th, 1896.

MY DEAR PLAYFAIR,—Surely the Americans would be wrong not to accept a conference to adopt the Monroe doctrine. Such an international confirmation would tend to clear the air, and remove from the minds of all the American people the idea—so extraordinary to us—that either we or any other European nation covets one additional inch of soil on the American continent.

Besides this advantage, this plan would in our eyes appear to be more regular and more in accordance with the proceedings of diplomacy. However, if Mr Bayard does not like it, I am not inclined to press for it strongly.

I think there would be no objection to introducing an article to some convention establishing a general arbitration between Great Britain and the United States for all cases of (1) disputed boundaries in unsettled territories, (2) complaints by nations of one side alleging injury by officials of the other. (This is a very common case, involving much correspondence, and admirably suited for arbitration.)

The above would of course include the Venezuelan case, in regard to which, however, it would not be enough merely to provide that the disputed boundaries should be "taken into account." In my view, occupied places and districts ought to be mutually excluded. Mr B. is wrong in thinking that Venezuela has few settlements. On the contrary, I *believe* her settlements come nearer to the Schomburgk line on her side than ours do on our side of the line.

Assuming that there was agreement on this point, which is a point of principle, it would remain to define "settlements" and to decide on the Commission. My own idea is that Venezuela must be represented, and I should have

thought that a Boundary Commission like the Commission for the Pamirs or for Delimitation of Frontiers of the Gold Coast would be the most practical way of dealing with the business. In all the cases quoted, the Commissioners have been able to agree among themselves, or in exceptional cases they referred a point to their respective Governments, who have at once come to an understanding.

Believe me,

Yours very truly,

J. CHAMBERLAIN.

On January 20th Playfair had another interview with Mr Bayard, and learned from him that the American Government was exceedingly anxious to provide for the exclusion of all bogus claims of settlement. This he reported to Mr Chamberlain.

Mr Chamberlain to Playfair.

COLONIAL OFFICE,
January 23rd, 1896.

MY DEAR PLAYFAIR,—I have received your two last letters. Of course no concession without serious occupation would be considered a settlement. I think five years' *bonâ fide* occupation would be a fair definition. I do not think there is any reliable map or book showing accurately the lines of such settlements on either side the Schomburgk Boundary, but I am telegraphing for information.

Believe me,

Yours very truly,

J. CHAMBERLAIN.

Mr Bayard to Playfair.

January 29th, 1896.

DEAR LORD PLAYFAIR,—I have a communication to make to you, and will see you at 3 p.m. to-day, or to-morrow at 10.30 a.m. at my residence, or will await your decision as to time and place. To-night I am tied by an engagement.

Sincerely yours,

T. F. BAYARD.

At the interview which followed, Mr Bayard read to Playfair the telegrams which he had received from Washington with regard to the suggestions made in Playfair's memorandum. In all the communications which had been made from this side of the Atlantic, the exclusion of the settled districts from any arbitration had been insisted upon. Mr Bayard himself had fully understood this, and had impressed it upon his Government. Playfair found to his disappointment that the Executive of the United States seemed disposed to pass this condition by. He reported to Mr Chamberlain accordingly.

Mr Chamberlain to Playfair.

HIGHBURY MOOR GREEN, BIRMINGHAM,
February 1st, 1896.

MY DEAR PLAYFAIR,—I have to acknowledge your letter of yesterday, and feel sure that my request for information from the United States Government will be favourably considered. In regard to your previous letter, of 29th ultimo, I have to point out to you that although the necessity and practical advantage of confining any inquiry by a Commission, or Tribunal of Arbitration, to the unsettled lands on both sides has formed a prominent part of every representation you have made to Mr Bayard, yet there is no allusion to it in the suggestions which come from Washington, although Mr Bayard says that this condition is, he believes, understood and desired.

In my view it is an essential condition of any settlement on the lines you have been following. In this controversy Great Britain has been contending for men, and not for territory; for the rights of settlers whom we have encouraged to take up residence, and to invest their fortunes in the colonies, and not for a mere question of so many acres more or less of land.

I think, therefore, that the time has come when the tacit understanding on which you have proceeded should be formally confirmed; failing which, I fear there will be no advantage in our continuing our private conference to find

a satisfactory and honourable solution. If, however, this point is accepted on both sides, I believe there will be no difficulty on other heads.

Believe me,

Yours very truly,

J. CHAMBERLAIN.

Mr Bayard to Playfair. *February 23rd, 1896.*

DEAR LORD PLAYFAIR,—I am grieved to learn of your being so much indisposed, and that we shall be deprived of the expected pleasure of having Lady Playfair and yourself to dine on Tuesday next. Pray get well; you are needed. And now let me say a word about Venezuela. During the long pause in our informal but earnest colloquies, it is evident that a strong and most wholesome public sentiment has proved its existence on both sides of the Atlantic; and while it encourages the efforts of co-operative international amity, it also notifies the enemy, so that it behoves us to clinch our arrangements without loss of time, and thus prevent the question from being cast into the furnace of the political canvass upon which the people of the United States will enter in a few short months. Surely the practicable remedy contained in the suggestions I last made to you, and upon which, when we last met, I conceived we were in substantial accord, ought not to be imperilled or lost because of the conjectural or possible transfer of property rights in the *terra incognita* of Guiana from one political jurisdiction to another?

The phrase in Mr Chamberlain's note to you of February 1st, and through which you ran your pencil, that the object in view of Her Majesty's Ministers was "men, and not territory," surely does not state the case as it actually exists; because, if the native occupation and possession of the land is held irrevocably to tie the land to the owner, the land equally with the man would be excluded from the proposed submission to arbitration. I need not say to you that respect for the law, its moral principles and conscience, is equally shared by both branches of our race, and that

Spanish-American methods of dealing with property and personal rights would be as little likely to find favour, or have influence, with the commissioners on the part of the United States as with those selected here. So that if there should turn out to be some "hard cases" of honest proprietorship in the disputable region, in which honest purchasers without notice would suffer, and over which the application of equitable principles favourable to the protection of vested rights need not, in the face of the clear facts, be extended, surely provisional arrangements for compensation and indemnification for such cases could be made without serious difficulty.

I must say to you that I am impressively instructed to urge co-operation by those in authority here without loss of time; and with such a spirit as now exists, with a Commission such as is contemplated, containing such elements of legal learning, justice, equity, and amicable patriotism as would be entrusted, together with the (possible, but not probable) resort to the ultimate decision of the highest two judicial officers of the respective countries, it seems humanly impossible that serious wrong should be done to any man. If with such methods and such machinery justice should not be evolved, where in the range of human nature can it be found?

Believe me,

Sincerely yours,

T. F. BAYARD.

Mr Chamberlain to Playfair.

40, PRINCES GARDENS, S.W.,
February 25th, 1896.

MY DEAR PLAYFAIR,—I now return you, according to your request, the letter from Mr Bayard of February 23rd. I am sorry that I cannot but regard its contents as unsatisfactory.

I think it well at this stage to remind you of the course of our informal negotiations. When I first saw you, I pointed out that the message of the President appeared to place the two countries in direct antagonism, and

that accordingly the object of all friends of peace should be to find some third course which both Governments could accept without going back on their previous declarations. I observed that while successive English Governments had uniformly refused an unlimited arbitration, it might be possible to arrange for an arbitration under conditions which might be acceptable to both parties; and I suggested *inter alia* that if settled districts on both sides of the Schomburgk line were excluded, there would probably be no difficulty in arriving at a boundary to be drawn by a competent tribunal, between the settlements in either country. This suggestion was submitted by you, and on the 17th January a telegram from Mr Olney was received, which suggested that in the reference to arbitration specific provision should be made that long-continued occupation should be taken into account.

On January 19th I replied that the exclusion of the settled districts was a matter of principle, and that the words, "be taken into account," did not seem to me to be sufficient.

On the 20th January you gave me an account of your interview with Mr Bayard, in which you reported that he was anxious that in the definition of settlement bogus claims should be excluded; but he stated that he quite understood that the principle of exclusion underlay our proposal.

On the 23rd January I suggested five years' *bonâ-fide* occupation as the definition of a settled district.

On the 29th January you forwarded to me a definite proposal from Mr Olney, in which, however, no reference was made to settled districts. You stated that you had pointed this out to Mr Bayard, who said that he believed that the principle was understood and desired. On the same day I replied to you, pointing out that the exclusion of settled districts was stated to be the essence of the arbitration. Mr Bayard explained that Mr Olney insisted on *bonâ-fide* as contrasted with snatch settlements; and you suggested the words "effective occupation" as meeting the case.

This being substantially the history of the negotiation, I am surprised to find that in Mr Bayard's last letter, of February 23rd, he goes back to the original proposal for an open and unconditional arbitration, and ignores the continued insistence by both you and me on the principle of exclusion. To surrender this principle now would be to cut away the ground on which we have sought an amicable compromise, and would stultify the repeated declarations of the British Governments, from Lord Aberdeen to the present day.

As the abstract which I have given of our correspondence shows that this point has from the first been steadily kept before Mr Olney, I must express my great disappointment that the United States Government should apparently desire to withdraw from the position which I think we both understood they originally accepted. In this case I can only hope that some other compromise may be found in the course of the negotiations, and as I understand that these are now officially in progress, I think no object will be served by continuing the informal discussion, which has unfortunately failed to bring about a complete understanding.

Sincerely appreciating the efforts which you have made, and trusting that although at present they have led to no practical result, they may have had the effect of clearing the ground for further negotiations,

I am,

Yours very truly,

J. CHAMBERLAIN.

Mr Chamberlain's summary, admirably clear and concise, sufficiently indicates the part which Playfair had in the inception of the earliest negotiations that followed the unfortunate rupture occasioned by President Cleveland's message. The negotiations which, on the strength of his personal knowledge of American politicians and politics, Playfair had initiated, did not, it will be seen, result in the definite settlement of the question at issue. But the official

negotiations which followed, and which advanced along the line first indicated by Playfair in his memorandum of January 12th, brought about that happy result. In the autumn of 1896 a Court of Arbitration was agreed upon, and it was accepted by both Governments as an essential point that settled districts were to be excluded from arbitration. For the definition of settled districts, it was agreed by the two countries that the same lapse of time which protected natives in civil life from having their title questioned should also protect the English colony in the disputed district. The reader will not, I trust, think that I have occupied too much space in telling this story of Playfair's intervention in the great dispute. The phase of that question with which he had to deal has now passed into the domain of history, but it is impossible to forget that for several anxious months Great Britain and the United States seemed to be drifting towards a fratricidal war, the worst of all the calamities which could now overtake the civilised world. No man who had any part in averting that catastrophe could fail to feel justly proud of his share in the work; and Playfair, during the remainder of his life, was glad to know that his own efforts had in this respect been of some service, not only to his fellow-countrymen, but to the people of a country with which he had become connected by so dear a tie.

After the successful conclusion of the official negotiations for the setting up of the Court of Arbitration, Playfair had a friendly note from Mr Bayard, referring to various private matters, in which the following lines occur :—"I think you and I can shake hands over the settlement of the Venezuelan matter, which has passed the stage of inflamation, and healing is almost accomplished. (I believe there are two 'm's' in inflamation, but I drop one as some Englishmen might drop an 'h,') but *de minimis non curat*, and we can stand together in the main result."

CHAPTER XVI.

SERVICES TO SCIENCE AND EDUCATION.

Scientific Appreciation of Playfair by Professor Crum-Brown—Sir Edward Frankland on his Investigations into the Best Coal for the Royal Navy—Playfair on Health and Disease—On Vivisection—On the Applications of Science to Commerce—On the Connection between Man's Necessities and the Industrial Arts—Playfair's Work as an Exhibition Commissioner—The National Buildings at South Kensington his Monument—Initiator of "The Victoria and Albert Museum."

PLAYFAIR'S position in the world of science can, in the nature of things, only be determined when sufficient time has been allowed to elapse to bring him and his contemporaries in scientific work into their true focus. The reader has seen how full and busy his life was, and how from first to last he was ever striving to give practical application to the successive discoveries of science. Throughout his career his chief object seemed to be to bring all the stores of knowledge which he had at his command, all the teachings of experience, to the service of his fellow-men. It was in Parliament, on Royal Commissions, as the active spirit in a hundred different agencies for advancing our social welfare, that he played his most conspicuous part; and naturally enough, it is as the practical man who turned to good account the labours of the scientific men of his time that he made his greatest mark upon his own generation. But amid the incessant pressure of this practical work in legislation and social reform, Playfair never ceased to be more or less of a student, and his mind was never free from the study of questions which belonged to the region of science rather than to that of politics. Of his position in

the scientific world no better account has been given t
that which I am permitted to quote from the per
Professor Crum-Brown. It is a lucid and brief, but
incomplete survey of his career as a man of science,
as it brings within short compass the whole of Playf
labours in this domain, it will not be without interest
the readers of this biography.

"Lyon Playfair," says Professor Crum-Brown, "came home
his education from India to St. Andrews, where his grandfather
been Principal of the united College of St. Salvator and St. Leon
and where his uncle, Sir Hugh Lyon Playfair, after a distinguis
career in the Indian Army, retired in 1834, not to repose, but to
battles against dirt, disease, and ruin—battles the result of which
see in the clean, prosperous, and healthy city of St. Andrews.
may well believe that Lord Playfair derived some of his enthusia
for sanitation and order from his uncle, 'the eccentric and energ
soldier who begged, bullied, and wheedled away the filth
ruinous neglect which bade fair to entomb the ancient city.'

"After some years in St. Andrews, he went to Glasgow to stu
medicine, but was attracted to chemistry by the teaching
Graham, then Professor of Chemistry in the Andersonian. Af
a short visit to India, he resumed his chemical studies unc
Graham, in the University College, London. In 1838 he went
Liebig's laboratory at Giessen, where he worked at organic chem
try, and produced his first scientific paper 'On a New Fat Acid
the Powder of Nutmegs.' Liebig was not only his teacher but
friend, and when Liebig, on the invitation of Prince Albert, came
this country to lecture on agricultural chemistry, Playfair acted
his assistant and interpreter, and was thus introduced to the Prin
—an introduction which had an important effect on his subseque
life.[1] For two years he managed the chemical department
Messrs Thomson's Printing Works at Clitheroe. In 1843 he w
appointed Professor of Chemistry in the Royal Institution
Manchester. In 1844, on the recommendation of Sir Robert Pe
he was appointed a member of a Royal Commission for the exan
nation of the sanitary condition of large towns and populo
districts. This was the beginning of what was to be a large part
the work of his life. In 1845 he was one of the Commissioners
the Irish Famine, and from that time till his death there was
year during which he was not appointed to serve on a Roy

[1] This is a mistake, Playfair's introduction to Prince Albert havin
as told on a previous page, been made through the instrumentality
Sir Robert Peel.

Commission or a Select Committee of the House of Commons, in very many cases as chairman. Among the Commissions on which he served, besides those already named, may be mentioned the Exhibition of 1851, the Exhibition of 1862, the Cattle Plague, the Reorganisation of the Civil Service (the Report of which is still known officially as the Playfair Scheme), Pensions for the Aged Poor, the University of London, the Herring Fisheries of the United Kingdom, Coal for the Navy. In 1846 he was appointed Chemist to the Museum of Practical Geology, and Professor of Chemistry in the Government School of Mines.

"As Special Commissioner in charge of the department of juries at the Great Exhibition of 1851, Playfair had an entirely new task before him. This was the first international exhibition; he had no precedent to work upon. What he did was quite original, and it was so well done that it became the model for all succeeding international exhibitions. There can be no doubt that the success of the 1851 Exhibition was to a great extent due to Playfair's clear view of what ought to be done and of what could be done, and to his untiring energy in doing it and getting other people to do it. The value of this work was recognised in the highest quarters, and Playfair became a Companion of the Bath and Officer of the Household of the Prince Consort. A more striking proof of the value set by others on his services was the fact that he was asked to undertake the same duty in connection with the Exhibition of 1862, as also that of the Paris Exhibition in 1878. The Prince of Wales, who was President of the British Commission, appointed him Chairman of the Finance Committee.

"The 1851 Exhibition led in 1853 to the foundation of the Department of Science and Art, and Playfair and the late Sir Henry Cole were appointed joint secretaries. In 1856 Playfair became Inspector-General of Government Museums and Schools of Science. These offices he held till 1858, when, on the death of Professor Gregory, he was appointed to the Chair of Chemistry in the University of Edinburgh. In Edinburgh he created, practically out of nothing, a really useful teaching laboratory. The rooms then available were very ill-suited for the purpose, and the funds quite inadequate; but he made the most of the former, and supplemented the latter, spending on the department the whole of his professorial income during the first year, and a large part of it during subsequent years of his tenure of office. Playfair was an original member of the Chemical Society of London, over which he presided in 1857–59. He was elected a Fellow of the Royal Society in 1848, and of the Royal Society of Edinburgh in 1859. He was President of the Chemical Section of the British Association in 1855 and in 1859, and of the Association in 1885.

"Playfair had a truly scientific mind, and was always busy; and yet we do not find a great deal of original scientific work recorded

under his name in the 'Royal Society Catalogue of Scientific Pa
His work lay mostly in another direction, and as he belonge
only to the world of science, but also to that of practical busi
he was specially fitted to act as an interpreter between them.
an interpreter is needed. The man of science does not al
know what the business man wants, and the business man
does not understand what the man of science tells him.
services are, perhaps, appreciated more highly by the man
immediately feels the benefit of them—the statesman, the m
facturer, or the merchant—than by the man of science. Bu
should remember that if science takes a higher place now th
took fifty years ago, if the opportunities for the genuine stu
science and for the prosecution of scientific investigation are gr
now than they were then, if science is taking more nearly its
place in the education of the country, that is due to a large e
to Playfair's wisdom and hard work. Of Playfair's contributio
pure chemistry, the most important is the discovery and inves
tion of the nitro-prussides; and to applied chemistry, the repo
the work undertaken by him, along with Bunsen, on the g
evolved in iron furnaces. But besides what was publishe
scientific journals, or in the Transactions of learned socie
Playfair did a great deal of original scientific work—how m
no one can now tell—incidentally in the course of the investigat
of the numerous Commissions of which he was a member."

No competent person will question the accuracy
Professor Crum-Brown's summary of Playfair's labo
as a man of science; and the tribute which he pays
the part that Playfair had in bringing science and stat
manship, science and industry, into close and practi
alliance, will be endorsed by all men of science and
practical workers who knew the story of his career.

Sir Edward Frankland, one of Playfair's many pup
who attained distinction in the scientific world, h
favoured me with an account of his investigations in
the best coal for use in the Royal Navy—one of t
many inquiries conducted by him in connection w
those Royal Commissions to which Professor Crum-Bro
alludes in the foregoing paper. In Sir Edward Franklan
opinion, this particular investigation was a typi
example of Playfair's mode of work, and furnishes

model for all engaged in similar inquiries. It occupied many years of Playfair's life—all the time he could spare from his regular avocations being devoted to it. He himself has passed by the whole of this vast amount of labour with little more than a casual mention in his Autobiography. Sir Edward Frankland[1] declares that for plan of procedure, scientific accuracy, and thoroughness of execution, Playfair's reports on this investigation will bear favourable comparison with any ever presented to Parliament by command of Her Majesty.

The ordinary reader will obtain the best idea of the extent of Playfair's knowledge, and of the peculiar place which he occupied in the world of science, from a perusal of the little book, published in 1889, entitled 'Subjects of Social Welfare.' In this book Playfair brought together a number of the papers and addresses which he had delivered upon different occasions, not merely to scientific but to popular audiences. The subjects dealt with are various, ranging from the Public Health and the Phenomena of Sleep to Bimetallism and the Relations of the Universities to Professional Education. But whatever the subject, it is always treated by Playfair in a manner that illustrates his special standpoint as a man of science. His great object throughout his life was to bring scientific knowledge and discovery into direct relationship with the practical work of life. The Fates had made it impossible that he should pursue his early path as a scientific investigator. He had been drawn away from the fascinating delights of that path by his absorption in public business. For many years he was the man of affairs, dealing either in the Council Chamber or in Parliament with those questions which directly affect the welfare of society. But he never forgot his first love; and whenever he had

[1] Whilst these pages were passing through the press Sir Edward Frankland died (July, 1899).

the opportunity he strove to impress upon those with wl he was brought in contact the virtues of science as a g ameliorating influence of life, and its uses in the deve ment of the resources of a people, and in the remova the evils to which society is a prey. His style, bot speaking and in writing, was at once delightfully sin and delightfully picturesque. The illustrations by wl he sought to enforce the truths he was teaching v drawn from the commonest objects, and were m effective by the ingenuity with which they were app to the subject in hand. He was one of the few i who could make even an oration upon Bimetallism teresting to the uninformed. In turning over the pa of 'Subjects of Social Welfare,' I find many passa illustrating his peculiar method in dealing with abstı questions, and the remarkable ability with which he able to make complex problems intelligible to the ordin mind. I find also in the book some of those mas strokes which made Playfair one of the great pract teachers and pioneers of our time. Other men dug m deeply into the soil in search of abstract truth, but had at least a wonderful knack of laying his hands u the nuggets in the mine in which others wrought, a of bringing them to the light of day.

The first paper in the volume of which I am speak consists of an address which he gave as President the Health Section of the Social Science Congress Glasgow; and some extracts from it will show, not o the clearness with which he pursued any line of ar ment, but the poetic fancy which enabled him to br it home in its most picturesque form to those wh he addressed.

Comparing the body politic to the body of the individ man, he pointed out that the latter was composed distinct particles, and that disease meant that some

these particles were being wasted more rapidly than they were being restored.

"So in the body politic, when the rate of mortality is too high—that is, when the individuals of its population which constitute the particles of the State, waste too rapidly—the State suffers from public maladies. Hence the State medical officer and the private physician work on like principles; for to the former the community, to the latter the individual, is the patient. This relation of the individual to the community, and the reflex action of the community on the individual, give a double motive for sanitary action. For the community, depending as it does on all the moments of health of individuals, requires to watch and cherish them; while each individual must feel that it is his interest to watch the health of his neighbour, upon whose soundness rests the foundation of his own well-being. So that the common law of health is the Christian law: 'Thou shalt love thy neighbour as thyself.' . . . The more we study the question of public health the simpler does the problem become in theory, though its attainment is difficult in practice. All that we need aim to secure is purity, air, cleanliness in the house, the air and the water, and genuineness in the food and clothes. In fact a great part of sanitary science can be comprised in that one word, 'cleanliness.' No epidemic can resist clean houses, clean air, and clean water. Disease, like the evil demons of old, shuns cleanly places. In olden times, as among the Jews, evil spirits dwelt in filthy places, especially loving tombs and ordure. Every private closet contained a special demon of its own, and it is so to the present day, in a different sense. I am quite sure that the chamber of Sara, the daughter of Raguel, as described in the Book of Tobit, must have overlooked a dung-hill, otherwise she would not have been so grievously afflicted by the unclean spirit, Asmodeus, who, out of love for her, strangled her husbands. But Tobias, her eighth husband, for whom his father-in-law considerately dug a grave as soon as the marriage was performed, obviously knew that there might be smells even too bad for a demon; for on the bridal night he threw the powdered heart and liver of a fish on some burning embers in her chamber, and, as the narrative tells us, 'the which smell when the evil spirit had smelled, he fled into the uttermost parts of Egypt.' To my mind the Book of Tobit is a distinct hygienic allegory. The good Tobit had a craze for burying dead bodies, and had all his troubles in consequence of his hygienic propensities. Sleeping in a vile place, the sparrows muted filthy dung into his eyes, and rendered him blind; but Raphael (that name by interpretation means 'the medicine of God') comes as an angelic guide to his son Tobias, and puts all things right by his hygienic knowledge, conquering even the foul demon, Asmodeus, and curing Tobit of his ophthalmia—acquired, as our workhouse children now get it, by foul air."

There is a picturesque force in this illustration, drawn from the Apocrypha, which everybody will acknowledge. Nor is the same quality lacking in the following passage, describing the demon of filth as it was to be encountered in our own Middle Ages:—

"It is not a pleasant task to dwell on the habits of the population even in our country in past times. Go back only to the time previous to the Reformation, and you can have no difficulty in understanding why luxury and squalor produced the plagues of the times of the Tudors and the Stuarts. High above all other dwellings were the castles and the monasteries, but the cabin of the peasant was worse than any to be now found in the furthest islands of Scotland. It was made of reeds and sticks, plastered over with mud. In these wigwams lived an ague-stricken population. In the towns the mechanics lived in rooms without glass windows, slept on straw beds, and worked in workshops unheated by coal fires. Even in well-to-do houses rushes covered the earthen floors, and got saturated with scraps of food which remained to putrefy under a new layer of rushes scattered over it, so that the petremen came to dig saltpetre out of the floors. Filth, instead of being abhorred, was almost sanctified. The monks imitated the filthy habits of the hermits and saints of early Christian times, for the early Fathers commended them. Even St. Jerome used to praise the filthy habits of hermits. He especially commends an Egyptian hermit, who only combed his hair on Easter Sunday, and never washed his clothes at all, but let them fall to pieces by rottenness. . . . But this association of filth with religion was unhappy in its consequences, for men ceased to connect disease with uncleanness, and resorted to shrines and winking virgins for cures of maladies which were produced by their own physical and moral impurities. Even the palaces of kings were filthy, according to the Duchess of Orleans memoirs of the splendid Court of Louis XIV. Under all these influences plagues were very destructive in England. Men first began to connect them with filth by some striking examples. Thus in 1665, when the Court and Parliament assembled at Oxford, it had an immunity from plague; and the reason of this immunity was traced to the thorough cleansing which the magistrates gave to the city to fit it for its distinguished guests. The Great Fire of London also taught Englishmen a wholesome lesson, for it came as a great sanitary agent to extirpate the foul nests of disease in the metropolis; and so at last the moderns learned what the ancients knew very well, that public health can only be assured by cleanliness, and that filth is the parent of disease, both among individuals and communities. . . . We forget the experience of our forefathers, that every

cesspool has its own particular evil spirit residing within it, and we are surprised when the demon emerges, especially at night, and strikes down our loved ones with typhoid fever or other form of pestilence. Perhaps we go a step further in the hygiene of moderns, and do throw the foul matter into drains, which empty themselves into our once beautiful rivers, that in many cases are still used as a beverage by people lower down in the stream. And when they remonstrate with us we surly wolves growl at the poor innocent lambs because they object to drink our abominations. This country once gloried in her beautiful rivers, but they are now mere open ditches, which pollute the districts through which they flow. Rivers in their normal state contain dissolved air sufficient to oxydise and destroy any accidental organic contaminations. This purifying power of air dissolved in water is essential, because no water, either in rivers or springs, could otherwise be pure. All sources of water are ultimately obtained from rain, and that is never pure, because it washes out organic impurities from the atmosphere. At the same time, it carries down air in solution, so that it presents, with the poison, its natural antidote. The air-purifying process is very limited, and is altogether insufficient for streams polluted with town sewage and manufacturing refuse."

This was the practical gospel which Playfair proclaimed when dealing with questions relating to the public health. In discussing those questions before popular, or even before scientific audiences, he brought the whole subject back, as will be perceived, to the simplest first principles. Men of science may possibly regard this teaching, and the illustrations by which it was enforced, as being so simple as to be positively puerile. But Playfair knew what he was about; and made it his business to state the practical conclusions at which he had arrived, in such a fashion that he who ran might read. It was in this way that he was enabled to do more than the most eminent of pure men of science in impressing upon men of affairs their duty with regard to the public health. Nor did he lack that fine moral courage which enables a man to speak the truth, even though he knows that by doing so he has to face unpopularity and misrepresentation. He has spoken in his Autobiography of the part he

played with regard to the question of compulsory vaccination.[1] It was a part in which the spirit of compromise was not to be found.

No less uncompromising was his language upon a subject which has excited even keener controversies than compulsory vaccination—the question of vivisection. The justification of vivisection, he declared, was that man's duty to man was greater than his duty to beasts. "If I thought," he said in the House of Commons, "that a comparative argument as to cruelty had much force, I could allude to the continued sufferings of the horses, mules, and camels in the Afghan and Egyptian wars, in terms which would be too horrible for this House to listen to. Even in the relation of man to man, how otherwise than by a common or national benefit could we justify the sacrifice of whole battalions in assaulting fortified positions; or how could we justify the frightful suffering which a surgeon inflicts when he excises a joint, or cuts out a huge tumour? How otherwise could we justify a parent when he corrects a child, or the State when it flogs a garotter? It is not the mere, or even the continuous, infliction of pain which is an offence against the moral law, but the unnecessary infliction of pain without an adequate motive to benefit mankind by the act. It is not the mere act, but the motive for that act which either makes it an offence against morality or gives to it a justification."

In the same speech there occurred a striking passage which deserves to be preserved, on another aspect of this much vexed question.

"Nothing is more short-sighted than the utilitarian cry of the ignorant against investigators in science. It is as superficial as the remark of Savarin, when he said, 'He who invents a new dish does more for humanity than he who discovers a star.' But exactly

[1] See *ante*, p. 297.

as navigation is the outcome of astronomy, or as bleaching or dyeing is the outcome of chemistry, or as engineering is the application of mathematics, so is medicine the outcome of the sciences of physiology and pathology. To strangle these sciences by refusing to them the only modes of research which render their progress possible, would be to relegate the medicine of the future to empiricism and quackery. Indeed, nothing is more certain than that every abstract truth given to the world constantly leads to the most unexpected and most useful applications to humanity. Thus when Galvani put a copper hook through the spine of frogs, and hung them on the iron rails of his balcony at Bologna in order to study the muscular contractions which were thus produced, who could have predicted that this experiment was to originate the science of Galvanism, and lead to the discovery of the electric telegraph to the electric light, to new motors for our machinery, and to the important use of electricity in the cure of disease and relief of human suffering? So it is with other discoveries in physiology, which, even when they appear remote from practical application, constantly lead to the most important benefits. When Pasteur and Lister made experiments on the minute organisms which appear during fermentation and putrefaction, who could have predicted that the experiments of the former philosopher would have opened up a wide field of promise in the treatment of diseases which afflict our flocks and herds; or that the observations of Lister would give us that admirable method of antiseptic treatment which now ranks as one of the greatest improvements of modern surgery? And yet Lister had to go abroad to perform a few experiments on animals, as the present Act was too restrictive for him to perform them in this country, though the pain inflicted was not greater than the healing of some slight wound. When you recall the horrible pain which used to be inflicted after a surgical operation by burning the bleeding vessels with a red-hot iron, the successive steps in surgery which have attended experiments in the healing of wounds, and which have culminated in the antiseptic treatment of Lister, have surely justified the small amount of brute suffering by giving comparative safety to the most formidable surgical operations in the case of man."

All through his addresses and speeches upon these questions affecting the welfare of our race, Playfair found opportunities for impressing facts upon those whom he addressed by means of novel views and illustrations. Thus, discussing with his Leeds constituents the question of agricultural depression, and of the proposed adoption of what is known as Fair Trade in order to remedy that

depression, he pointed to one cause which had been overlooked by the advocates of Fair Trade.

"There was a deeper cause at work than the temporary failure of our crops. The economical applications of science in the vast improvements of the telegraph, the railroads, and the steamships have changed the whole system of commerce. The effect of this has been to destroy local markets, and to consolidate all into one market—the world. If our landlords and farmers want to know the names of the three persons who have knocked out the bottom of our old agricultural system, I can tell them. Their names are Wheatstone, Sir Henry Bessemer, and Dr Joule. The first, by telegraphy, has changed the whole system by which exchanges are made; the second, by his improvements in steel, has altered profoundly the transportation of commodities by sea and by land; and the third, by his discoveries of the mechanical equivalent of heat, has led to great economy of coal in compound engines. By these changes the United States, Canada, India, and Russia have their corn crops brought to our doors. The effect of these discoveries upon the transport of corn will be realised when I state that a small cube of coal which would pass through a ring the size of a shilling, when burned in the compound engine of a modern steamboat, would drive a ton of food and its proportion of the ship two miles on its way from a foreign port. This economy of coal has altered the whole situation. Not long since a steamer of 3,000 tons going on a long voyage might require 2,200 tons of coal, and carry only a limited cargo of 800 tons. Now, a modern steamer will take the same voyage with 800 tons of coal, and carry a freight of 2,200 tons. While coal has thus been economised, human labour has been lessened. In 1870 it required 47 hands on board our steamships for every 1,000 tons capacity. Now (1887) only 28 are necessary. All these changes going on in the economy of fuel and of labour have led to increased production at a small cost. Four men in the United States, working for one year in the growing, milling, and transportation of wheat, could produce flour for a year's consumption of 1,000 other men, allowing one barrel of flour to each adult. I need not elaborate this point further, for you will all see how this has acted upon agriculture. It has made the grain market one all over the world."

One of the most important of Playfair's addresses gathered together in the volume from which I am quoting, is that entitled "The Inosculation of the Arts and Sciences," an address which, as he has himself recorded, he delivered as President of the Midland Institute at

Birmingham in 1870. One striking passage I must quote from this address as a further illustration of his method of treating his subjects.

"The industrial arts spring clearly out of the necessities of man. Man is peculiarly helpless as regards his own personal and physical belongings. With an intellect which, when developed, approaches that of an angel, he has a naked, unprotected body like that of an earthworm. Covered neither with chitine like the lobster, nor thick hide, nor with fur nor feathers, he looks as helpless at his birth as the unfledged gosling, but, unlike it, never gets a better protection from wind or weather as he grows older. The earthworm can mine and tunnel, so as to seek protection underground; but even this is denied to man. Every lower animal has within itself admirable tools for work. The tailor-bird can sew, the fishing-frog can throw out lines and bait, the beaver can build bridges, the silkworm can spin, the spider can weave, the bees can manufacture sugar, the ants can construct storehouses for their corn—all of them self-provided with admirable tools for the purpose, existing within themselves, and capable of being renewed by themselves when wasted by work. Man has neither in hands nor feet tools sufficient for his protection or sustenance. We know of no race of savages so absolutely wild as to possess no arts. . . . Nakedness and want of tools form the stimulant to man's industry, and the arts grow slowly, and at first almost imperceptibly, from his necessities. The experience which he thus acquires becomes an inheritance of common knowledge. Science is the evolution of that knowledge, and the mode of it is worthy of your consideration. Accumulated facts are necessary for science, but do not create it; for that arises only when man's reason acquires dominion over his senses, and teaches him to verify the impressions conveyed by them. In savage life science is not developed, because the gratification of the senses and subordination of everything to them are incompatible with the evolution of science from any number of facts. Even in civilised life it is long before men learn how to subdue their senses to their reason. If you doubt it, look to the lamentable hold which spirit-rapping and table-turning got upon our communities. The believers in such phenomena tell you that they saw them with their own eyes, or heard them with their own ears. So they did, but they do not understand that to see rightly and to hear with accuracy are about the last things a man learns. When an experimental philosopher thinks that he has made a discovery, he does not rely even on his trained faculties of observation, but spends months—sometimes years—in testing and looking at his discovery in every possible light before he announces it to the world. Yet an untrained observer, if he see a table turn round, or listen to a physical rap on the floor or

ceiling, believes that he is justified in ascribing it to some odylic or spiritual influence."

I have perhaps quoted too many passages from 'Subjects of Social Welfare,' but no biography of Playfair would be complete which did not afford the reader some knowledge of the manner in which he treated those great scientific truths which it was his mission in life to impress upon the world. Nor was it only with practical science that he dealt in this fashion. He was a Political Economist of the orthodox type. To him the laws of supply and demand were as true as the multiplication table ; and as a politician he made it his business to instruct his constituents, and other bodies of British voters, in those truths of political economy in which he had so firm a faith. He was always sane and clear-headed in his opinions. He abhorred fads and popular superstitions with all his heart. Above all, he was an individualist, and one of the great objects for which he wrought in Parliament, on the platform, and in the Press was the widening of the bounds of that human freedom upon which he constantly maintained that human progress itself depended.

When I turn from this side of Playfair's labours to the practical work which he did in furthering those great interests connected with the scientific and technical instruction of the people, I am naturally confronted at once by the task he accomplished as a member of the Royal Commission of the 1851 Exhibition. In a previous chapter the story has been told of the beginnings of the Science and Art Department at South Kensington, and of the part which Playfair had in founding the world-famed Museum and the Royal College of Science. His official connection with the Science and Art Department was brought to a close by his appointment to his professorship at Edinburgh in 1858 ; and for a time it was only as an outsider that he promoted the objects which the Exhibition Commissioners had in view.

In 1869, the year following his election to Parliament, he returned to the Commission—no longer as one of its servants, but as a Commissioner. It need hardly be said that he quickly became one of the most active members of that body. Soon after he joined the Commission a series of exhibitions was given by the Commissioners in new permanent galleries which had been erected for the purpose. In all of these Playfair took a very active part, his vast experience in organising such exhibitions being of the greatest service to the Commissioners. But the Commission, as a whole, was in a somewhat unsatisfactory state at that period; and in 1874 a special Inquiry Committee was formed for the purpose of reorganising the Commission. The members of this Committee were Lord Granville, Lord Ripon, Lord Carnarvon, Lord Spencer, and Playfair. The Committee practically undertook the management of the affairs of the Commission until 1883, when General Scott, the secretary, died. Playfair was then induced by the Prince of Wales and his fellow-Commissioners to become honorary secretary temporarily, until another paid secretary could be appointed. He undertook to fill this position for six months: he actually held it for six years. From 1883 to 1889 he was engaged in the important work of reorganising the financial position of the Commissioners. When he began his duties as honorary secretary there was a serious annual deficit on the accounts, and the work of the Commissioners was, in consequence, greatly hampered. When he gave up the honorary secretaryship in 1889, he had already converted the deficit into a surplus of £5,000 a year, and had placed the management upon such lines that this surplus revenue has since been more than doubled.

From 1889 to 1891 he was engaged in a task almost as important as that of bringing the finances of the Commission into a state of solvency. This was the elaboration

of a plan for disposing of these surplus funds in such a manner as to make them of the greatest benefit to the cause of scientific education. He had long seen that what was required in this country in order to give students an opportunity of acquiring scientific training as good as that to be obtained on the Continent, was the foundation of a number of science scholarships, which would enable students, when they had finished their ordinary education, to devote two or three years to research work in the great laboratories and teaching institutions both in this country and on the Continent. He had never ceased to advocate the foundation of these scholarships, and when the finances of the Commissioners had been put in order he felt that his time had come, and that he might fairly appeal to the Commission to employ the surplus funds which they now had at their disposal for this purpose. In the Report of the Commissioners to the Crown in 1889, they announced that they had directed the preparation of a scheme for assisting the promotion of scientific education by devoting a sum of not less than £5,000 a year to the establishment of scholarships, to enable the most promising students in provincial colleges of science to complete their studies, either in those colleges or in the larger institutions of the metropolis. A committee was appointed to act in conjunction with Playfair in drawing up a scheme for these scholarships. Playfair, who acted as chairman, invited the different members of the Committee to formulate proposals with regard to the scholarships, and eventually selected a scheme which had been drawn up by Professor Sir Norman Lockyer. The scope of this new and most important departure in our educational system will be gathered from the Report of Playfair's Committee to the Exhibition Commissioners in June, 1890.

"The Committee have had their attention drawn to the fact that there is a large number of scholarships in the country; and if the

Commissioners act on the same lines as those already occupied, it is possible that education will gain little by their action, as the endowment of the Commissioners may interfere with the establishment of new scholarships by private liberality. Hence it is desirable that the scholarships with which this Committee have to deal should be of a higher order than most of those now existing; in fact, their functions should begin where the ordinary educational curriculum ends. This system has been adopted with excellent effects by the French *École Pratique des hautes Études*.

"The Committee propose:—(1) That the scholarships shall be of £150 a year in value, and shall be tenable for two years, but in rare instances may be extended to three years by special resolution of the Commissioners. The continuation each year after the first shall depend upon the work done in the previous year being satisfactory to the Scientific Committee, which it is suggested shall be appointed by the Commissioners.

"(2) That the scholarships shall be limited to those branches of science (such as physics, mechanics, and chemistry) the extension of which is specially important for our national industries.

"(3) That the Commissioners shall from time to time select a certain number of provincial and colonial colleges in which special attention is given to scientific education, and give to each the power of nominating a student of not less than three years' standing to a scholarship, on condition that he indicates high promise and capacity for advancing science or its applications.

"(4) That the Commissioners shall appoint a Committee of Advice, who will consider and report upon the reasons for which the nominations are made by the respective colleges; and the Commissioners will appoint to the scholarships upon the report of their Committee.

"(5) That the scholarships, when awarded, shall be tenable in any University, either at home or abroad, or in some other institution to be approved of by the Commissioners. The holder of a scholarship must give an undertaking that he will wholly devote himself to the object of the scholarship, and that he will not hold any position of emolument during its continuance."

This was the basis of a scheme which has proved to be of the greatest practical importance in the educational work of this country. Even within a year of the establishment of these scholarships, the Commissioners were able to speak with great satisfaction of the results attained; and now that the scheme has been tried for nearly ten years, it is evident to all cognisant with the subject that

the progress of the nation in scientific instruction, an consequent ability to meet the fierce competition of o countries, have been materially increased by its operat The Commissioners, in their successive Annual Rep have borne testimony to the remarkable character of results which have been already attained. The holder the scholarships have been qualified not only to l posts of importance in our great workshops, but to ac teachers of science in our technical schools and Colo universities; and small as was the seed originally so the plant has attained such a growth that there is re to believe that the reproach which so long attached this country of doing nothing in a systematic wa further the growth of technical and science teaching soon be entirely removed. To Playfair, more than to other single man, the credit for this beneficent revolu must be given. He it was who first, in far distant d advocated the establishment of science scholarships. was through his labours in reorganising the finances of Royal Commission that the necessary funds for the end ment of these scholarships were obtained. And, finall was he who, in conjunction with a band of trained leagues of high scientific repute, selected a scheme wh has since worked so admirably. In the Report of Royal Commissioners issued in July, 1898, the Scie Scholarships Committee, after dwelling with satisfact upon the fact that seventy-nine students had already ceived scholarships under the scheme, of whom no fe than thirty-nine were engaged as teachers in scie colleges or other educational institutions, whilst twenty had obtained engagements in manufacturing firms or public departments, proceed to say :—

"The Committee cannot pass from this branch of the Re without reminding the Commissioners that the idea of the scie scholarships originated with the late Lord Playfair; that he m

the carrying out of the scheme, which has proved so successful in its working, his particular care ; and that for the five years to which this portion of the Report relates he took, as chairman of this Committee, almost the entire burden of its management. The Committee think that this work will hereafter be allotted a high place amongst the many services which that eminent man rendered to his country."

These words, though warmer than most official statements, will not strike those who knew what Playfair did in this connection as being extravagant. As a matter of fact, if he had done nothing else than the accomplishment of this task he would have been entitled to live among the great benefactors of his country.

I have said that in 1889 Playfair retired from the post of secretary to the Commission, which he had held for six years. His retirement from that arduous office drew forth expressions of deep regret from his eminent colleagues, and from the illustrious chairman.

H.R.H. the Prince of Wales to Playfair.

MARLBOROUGH HOUSE, *May 6th*, 1889.

MY DEAR PLAYFAIR,—Your letter of the 6th reached me to-day, and I lose no time in assuring you how deeply I regret your determination to resign the honorary secretaryship of the Royal Commission of 1851. We are indeed most grateful to you for the valuable time you have been able to give to the many difficulties which beset the Royal Commission during the six years which you have devoted to its interests. Nobody but yourself could have got us out of the serious pecuniary embarrassments in which we found ourselves placed. . . .

I am,

Yours very sincerely,

ALBERT EDWARD.

The Commissioners did not confine their expressions of approval to such warm and generous words as the

foregoing. As he has told us in his Reminiscences, subscribed to procure a valuable service of plate, was presented to him by the Prince of Wales, at a me of the Royal Commission at Marlborough House, acknowledged by Playfair in words which have al been quoted. His retirement from the honorary secre ship did not, however, mean that Playfair took a less a part in the proceedings of the body of which he become so important a member. From 1889 till 18 acted as vice-chairman of the Board of Managemen addition to holding the office of chairman of the Sc Scholarships Committee, which he had held from formation of that body. The pressure of years comp him in 1896 to retire from both these offices, thoug continued to retain until his death his position as me of the Commission. On his retirement he addresse Prince Christian, the Chairman of the Board of Mai ment, the following memorandum :—

Playfair to H.R.H. Prince Christian. *June 9th,* 1

SIR,—I am anxious to draw the attention of your Royal High as Chairman of the Board of Management of the Royal missioners for the Exhibition of 1851, to our general policy past in the allocation of our surplus funds. This is desirable intend to resign my position as (practical) deputy chairman o Board, and also that of chairman of the Committee of Scholars My many years of service in these capacities will justify asking this relief.

It may be useful to refer to the financial policy which has en the Board to secure a sound condition for our revenue. Tha into confusion because, under the administration of Mr Bo and General Scott, there was too great a tendency to use capi the erection of new buildings. This policy got us largely into and we had for a long time galleries on our hands for which was no demand, and which therefore produced no rent. At time, in addition to our large fixed debt of about £180,000, we yearly creating a floating debt by borrowing from the Ba England £2,000 or £3,000 a year to supply deficiencies in rev and expenditure. At present, our debt is wholly extinguished there is a satisfactory clear revenue to aid the objects for whic

act as trustees. It is not yet a safe surplus revenue, and if I felt myself able to continue for some years more on the Board, I would counsel the formation of a *Reserve Fund* of at least £20,000 before we show much increased liberality to the institutions which we now aid by annual grants in London, and in the provinces and the Colonies, by scholarships to their universities and colleges, for the promotion of research in sciences relating to the industries of the Empire.

Formerly the provinces and the Colonies were much discontented with the appropriation of the Commissioners' money; and this discontent, manifested by deputations, memorials, and questions in Parliament, became so grave that means had to be provided to meet the public desire that the provinces and the Colonies, which had done so much to ensure the success of the Great Exhibition of 1851, should feel that they had a direct participation in the profits which they had helped to create. The scheme of scientific scholarships placed at the disposal of the provincial and Colonial universities and colleges has removed this discontent, and is working admirably. New and important discoveries have been made by our scholars, who are in constant demand for teachers and professors, both in this country and in the Colonies and in the United States. Suppose, for instance, by this system one great discoverer like Faraday or Stephenson were to appear among the young scholars thus encouraged by £150 annual grants, a gift would have been presented to this country which would have been cheap had the nation contributed a million sterling to his production. This promotion of research is the reason why Germany is running us so hard in commercial competition; and our scholarship scheme is doing an important work in this country to the extent of our means by encouraging young scientists with capabilities of original discovery.

In reorganising the Board of Management there should be, on my retirement, a member who should specially devote himself to this work, which is not light, and requires aptitude and scientific judgment. Sir Henry Roscoe seems to me the one who could best step into my shoes for this special work of supervision. I do not desire to abandon the work suddenly, but at my age, ability to perform it may at any time abandon me; and I wish your Royal Highness as Chairman to know the conditions of the case in advance. As to the administrative ability which you require to supply the vacancies on the Board, there is abundant talent for selection in the Commission. The Prince of Wales and your Royal Highness will readily suggest names. We have already allocated annual sums for the support of the Royal College of Music, the Research Laboratory of the Imperial Institute, and for the provincial and Colonial scholarships held in universities and colleges. A further considerable annual sum is applied towards the maintenance of the Royal Albert Hall.

After competent provision for all the work which we have ur taken, and with the security of a reserve fund which has alr been begun, which will be a compensation for fluctuating rev and secure steadiness in the annual grants, I think a natural of our surplus funds would be for the promotion of specific ob in the work of the Imperial Institute—carefully avoiding their for such purposes as rates and taxes, structural additions, ligh and warming, or the club and pleasure purposes of the Insti The recent vote of money to the Research Laboratory was a g highly to be commended, and did not produce a note of pu criticism. . . .

I have the honour to be, etc.,

PLAYFAI

The Commissioners, in the Report in which the ab memorandum is embodied, state that the Prince of Wa after hearing Lord Playfair's statement of his wish retire from his offices, on behalf of the meeting expres the thanks of the Commissioners for the great bene which Lord Playfair had conferred upon the Royal Co mission by having willingly undertaken and successfu carried out for so many years the principal part in management of its business.

"The rapid improvement in the financial position of Royal Commission," said the Prince, "which had f quently been a subject of congratulation at these meetin proved how valuable Lord Playfair's assistance had be in that department. But as chairman of the Scholarsh Committee his services had been indispensable. One the first persons in this country to point out the necess of technical education, the scheme of Science Scholarsh was originated entirely by him. He had proceeded work out all the details of the scheme, and since it h been in operation he had taken by far the most acti part in its practical management. The results show that the work is of great public utility, and one t Commissioners might well be proud of."

With these gracious words of His Royal Highness, t

story of Playfair's connection with the Royal Commission of 1851, and with that splendid work of scientific instruction in which it still happily plays so prominent a part, may be fitly concluded. There were, however, other subsidiary labours connected with his position on the Royal Commission in which Playfair had to play a considerable part. Thus he was one of those to whom the management of the Royal Albert Hall was for a long time entrusted. He withdrew from his position as Vice-President of the Albert Hall Corporation some years before his retirement from the Deputy-Chairmanship of the Royal Commission. This step he took in consequence of being unable to approve of the manner in which the Hall was being managed. Shortly before the Royal Jubilee of 1887, the idea of celebrating that memorable anniversary by erecting the Imperial Institute was promulgated, and met at once with widespread acceptance. A site at South Kensington was suggested as that most suitable for the Institute, and the idea was put forward that the Royal Commissioners of 1851 should not only furnish the site, but should transfer to the Institute the whole of their resources. This proposal, when it was mooted to Playfair, met with his strenuous opposition, and most fortunately, as we know, was not carried further. But Playfair took a keen interest in the scheme for commemorating Her Majesty's Jubilee by the erection of an Institute representing and serving all parts of the Empire, and drew up a memorandum for submission to the Prince of Wales, in which he embodied his own ideas of the manner in which such an Institute might be made of greatest service to the Queen's subjects.

Sir Francis Knollys to Playfair.

MARLBOROUGH HOUSE,
November 17th, 1886.

DEAR SIR LYON PLAYFAIR,—I am desired by the Prince of Wales to express an earnest hope that you will

have the goodness to afford him the benefit of your assistance in connection with the proposed Imperial Institute, by consenting to serve on a temporary Committee which he has formed to advise him as to a scheme. Both His Royal Highness and the Committee are very anxious to learn your views respecting the South Kensington site as soon as possible. Perhaps you will not mind kindly sending me a line directly you arrive.

Yours sincerely,

FRANCIS KNOLLYS.

Memorandum for the consideration of His Royal Highness the President of the Royal Commission of the Exhibition of 1851.

(1) I cannot separate my position as honorary secretary of the Royal Commission from that of a member of the Committee of Advice regarding the Imperial Institute, and I therefore desire to have His Royal Highness's approval of my outline of proposals dealing with the Commissioners' property.

(2) Subject to the relief of the mortgage on our property, I would submit the following considerations:—

The property must be considered as wholly in relation to—

(*a*) The probable claims of the Government for the development of additional buildings (such as a *Conservatoire des Arts et des Métiers*, etc.) already reported on by a special Committee.

(*b*) The galleries already rented by the Government.

(*c*) The Royal Albert Hall.

(*d*) The Royal College of Music.

(*e*) The Schools of Science of the Government and of the Guilds.

(3) An Imperial Institute may be an important supplement to these, but it should neither compete nor dispense with them.

(4) It will be necessary to make a road across the property somewhere about, but perhaps more to the north of, the blue line [marked upon a plan enclosed with the memorandum].

(5) The Government should receive the offer of the land to the south of this road,[1] for the development of these important ends, upon such terms as may be agreed on.

(6) The land upon which the Imperial Institute might be built is to the north of this road, about nine acres being available, without touching the proposed gardens of the Albert Hall.

[1] Since sold to the Government, and now allotted to the Science Museum.

(7) I presume that the Imperial Institute will consist of two sections—A, the Colonial and Indian; B, the United Kingdom.

(8) There seems to be no chance of English manufacturers taking up the proposal warmly, unless it is embodied before them in the attractive form of a centre for the technical education of the nation.

(9) For this purpose I deem it essential to success that the Commissioners should continue to pledge themselves (as they have actually done in their last Report) not to spend their surplus income in buildings or endowments, but in the promotion of technical education, free scholarships and prizes, connecting the provinces with the scheme.

(10) The Central Imperial Institute will not have the *individual* support of Colonists and of English manufacturers unless there is associated with it a scheme of—

(*a*) Colonial combined industries or separate Colonies.
(*b*) United Kingdom; separate industries or separate centres of industry.

For this purpose the Exhibition galleries will be indispensable. Thus the Colonies might have the western, and the United Kingdom the eastern galleries. This, however, assumes that the Government give up these galleries, of which they are now tenants, by providing buildings for themselves. At present they are sources of revenue to the Commissioners. . . . We could not promise to give these galleries to the Imperial Institute without crippling our resources in regard to the promotion of technical education, which must be pushed to the forefront if the co-operation of this country is to be secured. We can only indicate that there are the galleries, and that they will probably be available on moderate terms.

(11) These varying exhibitions of separate industries, colonies or localities will be the life-blood of the Imperial Institute. These will represent the scientific and industrial resources of the Empire, but the periodical exhibitions will bring in the co-operation of the people, and that is necessary to influence the Governments. The gardens and music of the Royal Albert Hall will add attractions to the whole scheme, and are an essential condition for its success.

(12) If His Royal Highness the President approves of my offering, on the part of the Commission, to give co-operation on these lines, subject of course to the further approval of the Commission itself, I shall know how far to go in agreeing to or helping to make a scheme for the Imperial Institute. I am obliged to consider the whole interests involved in the property, and can readily foresee misapprehensions which should be guarded against in the outset.

LYON PLAYFAIR,

Hon. Secretary.

Though this scheme, with the exception of one paragraph, met with the approval of the Prince of Wales, it was not that which was eventually adopted. If it had been adopted, the fate of the Imperial Institute might possibly have been different; but the scheme is of interest in itself, not only as showing the practical bent of Playfair's mind, and the lessons he had learnt from his prolonged experience in connection with scientific and industrial exhibitions, but because of the evidence it affords of the pertinacity with which he fought for the great object of his public life—the maintenance and improvement of a system of scientific and technical instruction.

So long as South Kensington continues to exist in its present state, there will be no need to raise any monument to the memory of Lyon Playfair. That piece of ground, stretching from the Kensington High Road to Cromwell Road, which the Commissioners of the 1851 Exhibition found a mere region of dairy farms and meadows, is now covered with a unique collection of buildings devoted to great national and Imperial purposes. If we except the Imperial Institute—shortly to become the home of the London University—and the Natural History Museum, all these buildings, and the institutions which are housed in them, are more or less the offspring of the Great Exhibition of 1851. The national memorial to the Prince Consort most fittingly looks down upon this group of palaces devoted to the advancement of the arts and sciences, and to the instruction of the British people in the practical knowledge which is needed to enable them to hold their place in the world. Prince Albert was the father of the noble scheme, and to him this country owes a debt that it can never forget or refuse to acknowledge. But I do not claim for Playfair more than is his due when I say that among all the eminent men who served under the Prince Consort there was none who was able to render

such efficient service in carrying forward to completion the original ideas which led to the foundation of South Kensington, and in developing those ideas in harmony with our widening knowledge and our growing sense of the national needs, as that which he supplied. The reader has been told of the part he took in connection with the realisation of the "fairy dream" of the Prince Consort. More fortunate than his illustrious leader, he lived to see the great scheme of the South Kensington Home of Light and Learning brought almost to its completion. In his green old age, when he drove from his house in Onslow Gardens to the Park, his eye would brighten as he passed the range of stately buildings where the great schools and institutions, to the foundation of which he had given so many years of unselfish toil and thought, have found a worthy home. Of all the rewards of his life of labour, there was none dearer to him than the knowledge that in these buildings were embodied the fruits of his own self-sacrificing efforts. He had been one of the chief instruments in securing this potential wealth of learning and enlightenment for the land he loved, and in providing these noble palaces for the people. To few public servants has so great a reward fallen; by none could it have been more highly valued.

But as his life drew to an end he was ever conscious of one blot upon the plan, one glaring defect that still remained to be remedied. In spite of all the appeals that had been made by himself and others, the two great institutions which were the first and most direct fruits of the Exhibition of 1851, and with which he had been associated from their birth, remained without a fitting home. The Art Museum was still housed in part in the old Brompton "boilers," and in scattered buildings that were a disfigurement to their stately surroundings; and his own especial child—truly the child of his love—the Royal

College of Science, was confined for the most part to a series of hovels that were almost squalid in their meanness and inconvenience. He resolved that, if possible, this discreditable condition should not continue, and that the South Kensington Museum and the science collections and class-rooms should be provided with homes worthy of their importance as great national institutions.

In the summer of 1897 the country was to celebrate the completion of the sixtieth year of the Queen's reign. Many projects were suggested as to the best way of commemorating this Diamond Jubilee. To Playfair one mode of celebration seemed to be superior to all others. On February 8th, having first ascertained that Her Majesty was inclined to look favourably on the suggestion, he wrote to the 'Times' as follows:—

"The proposals to celebrate the Queen's Jubilee are chiefly philanthropic or local, and depend upon private subscriptions. Everyone will wish them success. But, so far as I have observed, there is no proposal to celebrate the auspicious event by a permanent national memorial out of public funds. In the year 1835 a Committee of the House of Commons was appointed 'to inquire into the best means of extending a knowledge of the arts and of the principles of design among the people (especially the manufacturing population) of the country.' In 1837, the first year of Her Majesty's reign, a vote was taken, and a Museum and School of Design were opened at Somerset House. This initial effort to promote technical education has developed into the magnificent art collections and art instruction at South Kensington. For the purposes of technical instruction in art these collections are superior to any in Europe. Berlin and Vienna have avowedly founded new museums on the English type, while Paris has re-arranged her museums to some extent in the like way.

"The Museum at South Kensington was opened by Her Majesty, accompanied by the Prince Consort, on June 22, 1857. It was due to the constant care and support of the Prince Consort that the collections assumed their national importance. Parliament supported the Museum and Schools with liberality, having spent on buildings upwards of £400,000. Since 1884 the energies of the nation seem to have been exhausted, for though steps have been taken at various times to complete the Museum, nothing has come of the good intentions of the Government. In 1891 a limited

competition of designs for the completion of the façade was invited by the Office of Works, and the selected plans were exhibited in the library of the House of Commons, and in the Museum. In the faith that Parliament would ultimately complete the Museum, the public have actively co-operated in enriching the collections by giving or bequeathing to the nation objects of art to the value of considerably more than a million sterling.

"The position of the Museum at the present time is, that its collections are splendid; the rooms for exhibition are good, though inadequate in extent; but the Museum itself has no fitting setting. In front of it there are bare brick walls, 'the Brompton boilers,' shabby railway vans and sheds, and altogether a general squalor which humiliates the nation in the eyes of foreigners who come in large numbers to visit the Museum. Is the nation so poverty-stricken that it cannot complete what Parliament has always intended to finish as a great national possession?

"My early official connection with the Museum during its organisation, and my later Parliamentary responsibility for it when Vice-President of the Council, may perhaps justify me in suggesting that the completion of the Museum would be a worthy public memorial of Her Majesty's long reign. There can be no doubt that the Queen takes a deep interest in the Museum. In January, 1862, Her Majesty wrote a letter to the Lord President of the Council, then Lord Granville, in which he is desired to inform the authorities of the Museum that 'it is Her Majesty's intention to take the South Kensington Museum under her special and personal protection.' The Government might ask Her Majesty's permission to change the meaningless local name of the 'South Kensington Museum' into the honoured national name of 'the Victorian Museum,' and take a small supplementary vote this year towards the commencement of the façade, which would require some years to build. The small beginning made by Parliament in 1837 has developed by 1897 into a great Museum, which has done much to advance the arts, the industry, the technical education and the enjoyment of the Queen's subjects, and the completion of the Museum would be welcomed by them as a memorial of the great benefits which they have received during her long and happy reign."

It is a great thing to know how to strike, but it is still more important to know when to strike. Playfair had chosen the propitious moment. His letter produced an instantaneous response, not only from the general public, but from statesmen and leaders in the educational movement. The newspapers supported his proposal; a memorial was addressed to the Government on the subject,

signed by many influential persons; and, as the result of this happy suggestion, Parliament was induced to grant a sum of £800,000 to be spent in completing the Museum. On the 17th of May, 1899, Her Majesty herself laid the foundation-stone of the new buildings, and officially declared that henceforth the institution should be known as the Victoria and Albert Museum. Playfair had passed away nearly twelve months before this ceremony took place, but to his happy and opportune suggestion the great work thus inaugurated was due. It was his closing service to the great scheme at South Kensington, his last contribution to the development of the technical education of his fellow-countrymen.

CHAPTER XVII.

THE END.

Adjudicating in the 'Statist' Competition—Speech at the Jubilee Banquet of the Cobden Club—Failing Health—Residence at Torquay — Death — Letters of Condolence to Lady Playfair — Burial at St. Andrews.

IN the year 1896 Playfair completed a task which had occupied him for many months. This was the award of the prize of one thousand guineas, offered by the proprietors of 'The Statist' for the best essay on the means of drawing the Colonies and the Mother Country into closer union. Lord Salisbury and Lord Rosebery had each been asked to nominate a judge to whom the essays might be submitted. Lord Salisbury had nominated the Marquis of Lorne, whilst Playfair was the choice of Lord Rosebery. No fewer than 136 essays were submitted to the judges, and as each was of considerable length, the work of selecting the best was no light one. Nor was this difficulty diminished by the fact that each of the distinguished judges had his own views upon political and economic questions. In their Judgment, dated April 20th, 1896, they mentioned eight essays which seemed to them to be of conspicuous merit. "We had no difficulty," they declared, "as judges, in selecting these eight essays for their conspicuous ability, but we were unable to agree as to which essay would receive the prize. One of us was named as a judge by Lord Salisbury, and the other by Lord Rosebery. Our economical views were known to be different when we were appointed, and it is natural that we

should differ as to the lines of policy which would be most advantageous for a fiscal union of the Empire. We propose, therefore, that the prize of one thousand guineas should be divided into two equal sums of five hundred guineas, and that two prizes instead of one should be given for two essays best representing among those competing the two views of taxation which are entertained in the plans proposed for the fiscal union of the Empire. The majority of the self-governing Colonies have been in favour of placing differential duties on foreign goods, and we both agree that the essay best deserving the prize for this policy of fiscal union is that signed 'Defence, not Defiance.' Legislation in the United Kingdom, on the other hand, is now based on the system of Free Trade, and does not tax foreign imports of food and raw materials in favour of a free importation of like articles from the Colonies. The most able essay representing the policy of Free Trade is that with the motto 'Scrutator,' and we both agree that this essay should have the other prize."

This was not perhaps an ideal award, but it fairly met the merits of the case. Playfair, it need hardly be said, was the judge who insisted that the policy of Free Trade should have its representative in the decision of this great competition.

In the summer of 1896 his most important public appearance was at the Jubilee banquet of the Cobden Club, when he was selected to speak in response to the toast of The Club. No better choice could have been made. For half a century at least he had been instant, in season and out of season, in maintaining the necessity of Free Trade for the development of the resources of a country like ours. His simple and unadorned eloquence had done much to keep the working men of Yorkshire faithful to the principles of Richard Cobden; and through all his writings and in all his political career he had main-

tained, in spite of temporary discouragements, the triumph of the Free Trade policy. In his speech, in responding to the toast of The Club, he offered no apologies for the principles upon which it was founded. He took his stand, according to his custom, upon facts and figures, and demonstrated the truth that under Free Trade English commerce has grown as it never did before. "There have been two recent estimates," he said, "of the value of the world's commerce—an official report of the United States, which places it at three thousand three hundred and one millions sterling, and the other by Mr Gustav Runnig, of Vienna, who gives it as three thousand one hundred and thirteen millions. Either of these will do for my purpose, which is to point out that the commerce of the British Empire in the year of our Jubilee is about one-third of the whole commerce of the world. According to these recent reports, hardly one-third of the entire world's commerce furnishes the population with food products, while two-thirds supply the other necessities and luxuries of life. In regard to the manufactured goods, three nations—England, Germany, and France—appropriate between them sixty per cent. of the trade of the world; and of this England takes nearly thirty per cent. as her share, Germany coming next with nearly eighteen per cent., and France third with thirteen per cent. Upon such a splendid position for the British Empire in the commerce of the world we Free Traders may be content to rest our case. We believe Free Trade and great trade to be synonymous terms. . . . The demand that England should renounce the freedom of her trade in order to differentiate in favour of the Colonies requires criticism, because it has received a sort of conditional support from a responsible Minister of the Crown. It is a policy which is politically dangerous, and would be economically disastrous to our working classes and to our productive industries. We are

all most anxious to strengthen the bonds which unite the Colonies with the Mother Country, but there can be no fiscal union while England is based on commercial freedom and the Colonies on Protection. The Colonies may be right in upholding Protection in their own interests, and England may be right in upholding Free Trade, but both must be proved to be wrong before we can have a Zollverein. For the last fifty years Free Trade has given Great Britain a predominance in the world of commerce. She is now Queen of the realms of commerce and Mistress of the Seas. By continuing steadily in the principles of Free Exchange, she will continue to maintain her glorious supremacy in the trade and navigation of the world."

There was, it will be seen, no wavering on the part of Playfair in his adherence to the doctrines which he had held so long and maintained so stoutly. Whatever might be the passing currents of opinion with regard to economic questions, he remained a Free Trader pure and simple to the day of his death.

Gradually during this year, 1896, and the following year, Playfair withdrew from the multifarious appointments which he had held in the public service. He felt at last a steady diminution in his powers of work. The machine which had run so long and so smoothly began to give signs of failing force, and he was under the painful compulsion of retiring from many positions which he had held with great advantage to the nation of which he was proud to esteem himself a servant. His retirement from his official work on the Royal Commission of the Exhibition of 1851 has already been recorded. From many other quarters, as he laid down his arms, he met with recognition which was deeply gratifying to him, and which proved that he had not worked in vain. Sir John Simon, the distinguished sanitary reformer, writing to him to

acknowledge an honour which had been conferred upon him by the Institute of Public Health, said:

"You remind me that we two are old fellow-workers for the Public Health. We indeed are now, I believe, the oldest who have been sharers in that battle, and you referred to me as two years your senior in life; but you pass without note the fact that long before I had given my serious attention to the cause in which I afterwards became a worker, you were on the Royal Commission which in 1843–45 prepared the way for future Officers of Health; and you leave it for me to remember, as most gratefully I do, how you were already a participator in the fruit-giving work of that Commission, of which you are now the one survivor, in days when I was yet a mere student of pathology and surgery. Believe me that the honour which has just been conferred on me, whatever charm it may bring as a tribute from the workers of later years, has not its least value to me in the fact that you—the true patriarch of our cause—have been willing to take part in the gift, and to enrich me by your most kind of letters."

These graceful and touching words deserve to be invested with a wider significance than that which was given to them by Sir John Simon. Playfair was the patriarch in many other noble causes besides that of labour for the public health, and it was with keen sorrow that he recognised the fact that his term of unselfish service was drawing to a close.

Playfair to Sir Lambert Playfair.

ONSLOW GARDENS,
December 8th, 1896.

I congratulate you heartily on the warm and friendly feelings shown to you both on leaving Algiers.[1] Mr Arkwright's address to the meeting was in excellent taste, and not the least over-stated. It represents an appreciation by

[1] Sir Lambert Playfair had been for many years Consul-General at Algiers.

your fellow-countrymen that you have a right to be proud of. I am glad that the church will have a permanent record of your services in Algiers. Thirty years form a long period of public service at any time, and one quite remarkable when you recollect in what a low condition of health you were on your return from Aden, and the doubts most of us felt whether you would be fit for public work again. We Playfairs seem to have a latent vitality in us which comes out with wonderful recuperative force. In the United States this autumn I thought the close of my work had come, but now I think I may still be able to go on for a year or two more, if such a hope is not too audacious at my age. . . . We propose to go to St. Andrews for August and September. I am glad to hear that you have bought a house in St. Andrews. It is sufficiently near that prelatical chapel to rejoice your hearts with embroidered robes and genuflections. I had not my compass with me when I saw it, but I fancied its orientation was perfect.

During the winter of 1896–7 Playfair's health was by no means good. His physical strength began to fail, and he was no longer able to indulge his old love of walking. But his spirits were as buoyant as ever, and he still retained that interest in life which may be said to have remained youthful to the very end. It was not until the winter of 1897-98 that serious alarm began to be felt by his wife and family with regard to his health. It was believed that the winter in London would be too trying for him, as he suffered from attacks of bronchitis, and from a low fever which refused to yield to any remedies. The Villa Marina at Torquay was secured as a suitable place in which he might spend the winter months away from the fogs of London.

Playfair to his Son.

VILLA MARINA, PARKHILL, TORQUAY,
January 3rd, 1898.

Many happy returns of the New Year to you and yours. I am so much better and able to take walks in

our beautiful grounds here that I have no apology for not personally thanking you for your many presents, so many that I can scarcely enumerate them—book-rest, box of cigars, partridges, wild ducks, etc. One of the latter I had for my dinner to-day. I have appreciated them all thoroughly. You got a Turkish medal for Christmas, and the Royal Institute of Public Health has voted me the Harben Gold Medal "for distinguished services to public health during the last fifty years." It has only been twice bestowed before—on Sir John Simon, so long a Chief Health Officer of the Government, and on Professor Pettenkoffer of Munich. The scenery here is absolutely perfect and our grounds delicious. We are all as happy as possible, and my convalescence is steady and rapid.

The Harben Gold Medal, to which reference is made in the foregoing letter, is the highest distinction which it is in the power of the Royal Institute of Public Health to confer. The presentation of the medal was made by the President, Dr W. R. Smith, in a letter in which on behalf of the Institute he bore testimony to Playfair's services in promoting during more than half a century all measures for improving the health and social condition of the people of this country. In acknowledging the honour on December 29th, 1897, Playfair wrote:—

"Your letter is peculiarly gratifying to me. It is true that since 1843 I have taken a keen interest in the promotion of public health, and have endeavoured to the best of my ability to improve it. In those early days I had the advantage of the active co-operation of great sanitarians—Sir Edwin Chadwick, Dr Southwood Smith, Sir Richard Owen, Dr Neil Arnot, Dr Budd of Bristol, Dr Ransome of Manchester, and others, to back me in my efforts to lead the Royal Commission on Public Health (of which I was a member) in the path of progress, and to overcome the obstacles of uninstructed municipal and parochial authorities. Without the combination of such

powerful sanitarians even the Royal Commission could not have succeeded in amending sanitary law. We met at stated times at simple dinners in each other's houses to discuss sanitary progress, and called ourselves 'Friends in Council.' Those were days when we had to grope for truth, as bacteria and their congeners were unknown in their relation to disease."

Even during his stay at Torquay he bore the burden of his fourscore years so lightly that it seemed impossible to associate him with the idea of advanced age. Nor did he fail to maintain his keen interest in those public affairs which had filled his life for sixty years. Although he knew that his days must necessarily be numbered, he was still as full as ever of projects of work and of zeal in the public service.

"The wages of going on" were still the reward that he coveted. To live in idleness was abhorrent to the man who had scarcely known an idle day during all his life. To die in harness seemed to him then, as it had ever done, to be the end most to be desired. The stay at Torquay did not relieve him from the distressing indisposition from which he suffered—a recurring fever which, raising his temperature, sapped his strength, and for which his physicians were unable to discover any remedy. In April, with the return of spring, he desired to go back to London, in order that he might take his part in the public engagements for which he might still have sufficient strength. Of these, one to which he looked forward with the greatest eagerness was the dinner to be given to the past-presidents of the Chemical Society, of which he had been one of the founders, and of which he was the oldest surviving president.

CHEMICAL SOCIETY,
BURLINGTON HOUSE, PICCADILLY, W.,
May 9th, 1898.

Professor Dewar to Playfair.

DEAR LORD PLAYFAIR,—For some time past the Council of the Chemical Society have had under their

consideration the measures that should be taken to commemorate the fact that you and six other past-presidents who have rendered conspicuous service to their science, this year complete fifty years' fellowship of the Society, viz. Sir J. H. Gilbert, Sir E. Frankland, Professor Odling, Sir F. A. Abel, Bt., Dr A. W. Williamson, and Dr J. H. Gladstone. The Council have now determined that the event shall be celebrated by a banquet at the Hôtel Métropole on Thursday, June 9th.

We are desired by the Council and Fellows to express the hope that you will honour them with your presence on this occasion, which it is intended to make a memorable one in the history of the Society.

All the foreign members have been specially invited, as well as a number of distinguished guests who are interested in the progress of chemistry in this country.

We are, dear Lord Playfair,

Yours very faithfully,

JAMES DEWAR,
President.

This dinner he agreed to attend, and accordingly, on the 15th of April, returned to town. Before the date fixed for the dinner he had passed away, and the celebration was in consequence postponed for several months.

After his return to his house in Onslow Gardens there was for a time a marked diminution in the fever, and as a new treatment had been decided upon, both he and his family felt hopeful as to the future. Unfortunately he got a slight additional cold early in May, and on the 21st of that month he had, to his own severe disappointment, to spend his eightieth birthday in bed. Many friends sent kind inquiries and congratulations to cheer him in his illness, and he evidently looked forward to an early convalescence. Mr Gladstone's death on the 19th of May had affected him profoundly, and on the day after his birthday

he penned with difficulty the following letter, writing it in bed in pencil, and giving it to Lady Playfair in order that she might copy it out for Mrs Gladstone. It was his last letter.

68, ONSLOW GARDENS, SOUTH KENSINGTON.

Playfair to Mrs Gladstone. *May 22nd*, 1898.

DEAR MRS GLADSTONE,—During the long illness of Mr Gladstone I was unwilling to add to your correspondence by any inquiries as to him and yourself, but now that the greatest and most true-hearted Englishman of our age has passed from suffering to a rest of peace in faith, I ask your permission to express my wife's and my own intense sympathy with you and your family. I admired and loved Mr Gladstone, not only for his great qualities, but for his intense belief in all eternal and temporal truths. Words fail in showing appreciation of his magnificent character, but you will allow us not to be altogether silent, but to add to the expression of universal sympathy with yourself. My wife writes this for me, as owing to illness I am unable to do so myself.

On Friday, May 27th, it was discovered that slight congestion of one lung had set in, and that his strength was failing. On the following day, that on which his old chief was buried in Westminster Abbey, his cough became incessant, and his weakness increased to an alarming extent. Even then, however, the cheerfulness which had distinguished him throughout his life was fully maintained. Thoughtfulness for those around him, and above all for the wife who watched over him with so devoted a care, was as marked as it had been at any moment of his life. That day, though unable to read, he looked over some of the books in which he had collected newspaper extracts referring to those great public questions in which he had taken so deep an interest, and was amused when he came upon a caricature of himself, describing to his sister-in-law what it was, and what it meant. On Whit Sunday it was

seen that the end was rapidly approaching, and the absent members of his family were summoned to his side. He himself suffered no pain, and was only conscious of a great weariness, and of a strong desire to sleep. About nine o'clock in the evening (Whit Sunday, May 29th) he asked that the lights should be put out. They were lowered at his request. When this was done he said: "Now I think I can sleep. Good night, good night." And in a few moments he had passed away without a sound or a struggle. Those who were with him throughout his last illness describe how they never heard him utter an impatient word or a murmur at the successive disappointments which befell his hopes of improvement. Not only his cheerfulness but his keen sense of humour never seemed to forsake him, and when members of his family visited him in his sick room he would joke with them as of old, and talk with tender affection of their domestic affairs. His family life, for reasons already stated, has not played a prominent part in this biography. One or two letters dealing with purely domestic matters have been designedly inserted, not because they bore upon that chronicle of never-ending work of which his life chiefly consisted, but in order that some side-light might be thrown upon his private character, and the depth of his family affections. "No letter he ever wrote," says one of his children, "could give an idea of his deep and intense sympathy, of his loving help in any trouble to those dear to him, and even to strangers. I never in the whole of my life have seen him cross, impatient, or known him speak a harsh word to anyone." Another of his children has pointed out to me that his correspondence with them, dealing as it so frequently did with practical matters of business, afforded but little clue to his real character. "He made himself charming to all with whom he came in contact, and was as interesting to a young person as to the most advanced

scientist; he had such a faculty of adapting his conversation to all people and circumstances. Children were particularly devoted to him, and he delighted in the company of the young. He was generous to a fault, and gave away a great deal in charity without anybody knowing about it. Some years before his death he got a postal order for 17s. 6d. The anonymous person who sent him this sum wrote, by way of explanation: 'You may not remember the circumstance, but many years ago I accosted you one night in the docks at Liverpool, and begged for assistance. You found that you had no money, but you took off your coat and gave me your waistcoat. Since then I have made a fortune, and now repay you.'" The incident was one which had passed out of Playfair's mind, and which he had never mentioned to others.

His death, occurring as it did within a few days of Mr Gladstone's, took place at a time when the country was so deeply absorbed in the loss of one great Englishman that it might have been supposed that it would hardly be able to take note of the departure of another true and tried public servant, who had so long been one of Mr Gladstone's most zealous and active lieutenants. Yet, when the news that Playfair had passed away became known, countless persons in every rank of life, who had been brought in contact with him, hastened to bear testimony to his worth, and to their own sense of the loss which the country had suffered in his death. From among the many letters received by Lady Playfair, I select one or two as being specially significant and noteworthy.

H.R.H. The Prince of Wales to Lady Playfair. May 31st.

DEAR LADY PLAYFAIR,—To-day the sad news reached me that your kind and excellent husband had "passed away," so I do not lose a moment in expressing my deepest sympathy with you at the terrible loss you have

sustained. I have had the advantage of knowing your distinguished husband even before I was ten years old, and during those many years I was on the terms of the most intimate friendship with him. In him I have lost a Master (as I am proud to say I was his pupil), an adviser, and a friend, and I shall always mourn and regret him *most* deeply.

The Princess begs me also to express her most sincere condolence with you, and I remain, most sincerely yours,

ALBERT EDWARD.

The Earl of Rosebery to Lady Playfair.

POSILIPO,
June 7th, 1898.

MY DEAR LADY PLAYFAIR,—I see with deep regret the news of the departure of your husband, and I must send a line to express my sincerest sympathy.

He was one of the wisest, fairest, and most loyal men that I have ever known in public life; and his devotion to work and to duty has never, I think, been surpassed.

With all this, he preserved a perpetual youth which makes it hard to believe that he has passed away in a ripe old age.

It must be an unspeakable comfort to you to remember at this time how you sweetened and brightened his life. But at such a moment there is no such thing as comfort; there is only mitigation. Such as it is, may it abundantly be yours!

Believe me,

Yours sincerely,

ROSEBERY.

Professor Dewar to Lady Playfair.

ROYAL INSTITUTION OF GREAT BRITAIN,
May 31st, 1898.

DEAR LADY PLAYFAIR,—I cannot find words to express my sympathy with you on account of the sudden bereavement that has fallen in the passing of your great and illustrious husband, Lord Playfair. These words will not tend to assuage your grief. My excuse must be a life-

long love and veneration for the great departed. He was my Master in everything, and I owe all to him. If he had only been spared a little longer, I wanted so much to have told him that at last hydrogen had succumbed, and about the new work I have in hand. But it was not to be. He has gone full of years and honours. When will we see his like again? His memory will ever remain with me as one of the most abiding treasures of my life. Mrs Dewar is deeply grieved. Lord Playfair was at our marriage. Wishing you all consolation and peace,

Yours most faithfully,

JAMES DEWAR.

On Saturday, June 4th, Playfair was laid to rest in the burial-place which had been chosen for him during his lifetime, under the shadow of the grey ruins of the old cathedral of St. Andrews, and within sound of the sea beside which he had played as a boy. He was honoured with a public funeral by the authorities of the city. The Senatus Academicus of the University, which he had represented so long in Parliament, attended officially, and the Queen and Prince of Wales were personally represented. There was a great gathering of the representatives of science and the public services, whilst the members of his own family were there without exception. His coffin bore the following inscription:—"Lyon Playfair, first Baron Playfair of St. Andrews, P.C., G.C.B., F.R.S., LL.D. Born 21st May, 1818; died 29th May, 1898, aged 80 years. 'For so He giveth His beloved sleep.'" The long, sweet sleep, which comes at the end to all, never followed a fuller life of work and achievement than that which has been imperfectly recorded in these pages.

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